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Betreuerin / Betreuer: Assoc. Prof. Olga Markič, PhD
University of Ljubljana, Faculty of Arts, Department of Philosophy

‘Technological transformations do not impress me, biological technology does not impress me, Internet does not impress me. I say this not out of arrogance.

No doubt much of what we do will change if we adopt the different technological options at hand, but our actions will not change unless our emotioning changes. We live a culture centered in domination and submission, mistrust and control, dishonesty, commerce and greediness, appropriation and mutual manipulation etc. and unless our emotioning changes all that will change in our lives will be the way in which we continue in wars, greediness, mistrust, dishonesty, and abuse of others and of nature. Indeed, we shall remain the same.

Technology is not the solution for human problems because human problems belong to the emotional domain as they are conflicts in our relational living that arise when we have desires that lead to contradictory actions. It is the kind of human being, *Homo sapiens amans*, *Homo sapiens aggressans*, or *Homo sapiens arrogans*, at the moment in which we have access to a new technology, either as users or observers, what determines how we use it or what we see in it.’

Humberto Maturana, 1997

‘Grenzenloses Mitleid mit allen lebenden Wesen ist der festeste und sicherste Bürge für das sittliche Wohlverhalten und bedarf keiner Kasuistik. Wer davon erfüllt ist, wird zuverlässig keinen verletzen, keinen beeinträchtigen, keinem wehetun, vielmehr mit jedem Nachsicht haben, jedem verzeihen. jedem helfen, soviel er vermag, und alle seine Handlungen werden das Gepräge der Gerechtigkeit und Menschenliebe tragen.’

Arthur Schopenhauer, 1860

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References to Schopenhauer's Works

The following abbreviations are used for Schopenhauer's writings. Please refer to *References* at the end of this thesis for publication details.

- FR* On the Fourfold Root of the Principle of Sufficient Reason. *Über die vierfache Wurzel des Satzes vom zureichenden Grunde*. (2nd edition, 1847)
- FW* On the Freedom of the Will. *Über die Freiheit des Willens*. (1860)
- P1, P2* Parerga and Paralipomena, Volume 1 and 2. *Parerga und Paralipomena, Band 1 und 2*. (1851)
- W1, W2* The World as Will and Representation, Volume 1 and 2. *Die Welt als Wille und Vorstellung, Band 1 und 2*. (2nd edition, 1844)
- WN* On the Will in Nature *Über den Willen in der Natur*. (1854)

Terminology

Unfortunately, there is no unified conduct for the translation of Schopenhauer's terminology. In this thesis the following notion will be used.

actuality	<i>Wirklichkeit</i> ;
apprehension	<i>Verstand</i> ; intellectual function of understanding and perception.
knowledge	<i>Erkenntnis</i> ; knowledge by insight.
objectivation	<i>Objektivierung</i> ; manifestation of the Will in the form of an object.
reasoning	<i>Vernunft</i> ; the faculty of reflexion and abstract thinking.
representation	<i>Vorstellung</i> ; mental construct or imagination – not: representation as in a representationistic theory, not: phantasy or illusion.
Will	<i>Wille</i> ; when considered as thing in itself.

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Introduction

In this work I tried to combine a variety of aspects. On the one hand, due to my personal and academic history I have developed multiple views to understand the world I am living in. I strongly commit to the methods of empirical research and do not simply *believe* in something that makes sense for me, without being convinced by more objective sources than my own subjectivity (*natural science*). Because of my background as technician I am a rather pragmatic person, who likes to try out and create useful things in a goal-oriented way (*engineering*). And finally, I am very keen to develop my intellectual capabilities and try to understand the indications of great thinkers (*philosophy*). On the other hand, one is used that a master thesis deals with a well-defined and rather focused topic. My research question can be stated quite precisely, namely *Is Schopenhauer's theory of mind plausible, useful and interesting in the light of modern findings and paradigms for questions raised in cognitive science?*. The answer, however, is by no means trivial and concise.

I dare to claim that I chose an unsafe approach with this work and could have made my life much easier by only discussing a fraction of Schopenhauer's theory of mind, like his contribution to the free will debate. However, this would have undermined my demand to understand and discuss the foundations of Schopenhauer's philosophy. This is necessary because all answers and positions can only be meaningfully understood, when it is also obvious in which paradigm they were created and for what domains they can be applied.

While reading Schopenhauer some questions arose that I could not leave unanswered. This is the reason why they had to be discussed in the scope of this work. My answers are substantiated and well founded, but cannot be seen as final due to time constraints and page limitations for this sort of writing. Nevertheless I managed to pinpoint some very interesting positions, which will be discussed in the following thesis. Therefore I prefer to consider this work rather a draft for further research, than a final paper.

In this master thesis I will go through the following problems. Schopenhauer is an advocate of epistemic idealism, but also an asserter of science and scientific methodology.

In the first discussion section his version of transcendental idealism will come under logical and empirical scrutiny. Next I would like to suggest that Schopenhauer's theory of the mind and the brain is compatible with modern theories based on neuroscientific research. After that, I am going to discuss a possible analogy between his theory and the theory of embodiment in contemporary cognitive science. Thereafter I will try to find out whether Schopenhauer's concept of a transcendental Will can also be understood metaphorically and be naturalized. In that section I will elaborate on the idea about similarities between Schopenhauer's idea and our understanding of evolution and to what extent they might be different. Finally, I am going to address Schopenhauer's opinion on free will and show that his concept is still valuable and interesting for modern discussion.

I hope I can comply with the expectations of my readers and that I manage to give an adequate insight into the mental world of a person, who was widely ignored during life-time and is widely forgotten nowadays. It is correct – and this is one of Schopenhauer's demands – that philosophy must not be justified by only relating to authorities but by arguments. However, one can learn a lot from this sources of inspiration. The work on his writings helped me, to understand and reflect some implicit presuppositions of my very own theory of mind.

John Searle mentions in the beginning of one of his books (Searle, 2006) that it was terrible to make readers believe they understand something, which they actually do not, that there was something explained, which actually was not, and that you solved a problem, which, in fact, you have not. Therefore I also have to mention that the foundations of Schopenhauer's philosophy are not fully elaborated in this thesis. I did not discuss his interpretation of Plato's *theory of forms* (*platonische Ideen*) and his account on ethics, moral and the special role of art, because I did not consider them that important for his theory of mind.

Chapter 1

The World as Representation

Arthur Schopenhauer begins his dissection of reality with the lines:

»Die Welt ist meine Vorstellung« (...) ein Satz, den Jeder als wahr erkennen muß, sobald er ihn versteht; wenn gleich nicht ein solcher, den Jeder versteht, sobald er ihn hört. (W2, §1)

His main reason for this claim is that all knowledge – and by that the world – is based on interpreted sensory data. Because this interpretation cannot be possibly achieved without a knowing subject, the whole world relies on the subject. It is therefore bearer of the world. (W1, §2) Subjective feelings or consciousness is immediately given, while everything else is mediated and therefore not directly accessible. With that position Schopenhauer holds an idealistic perspective. By subject Schopenhauer thinks of:

Dasjenige, was Alles erkennt und von Keinem erkannt wird. (W1, §2)

The world falls apart into two interweaving and interacting things, which depend on each other: the *subject* and the *object*. Without the subject there could not be any objects at all. Without material objects the subject could not exist. The keen idea that there was an objective world solely and detached from a subject is a wrong conclusion. Such a thing can only occur because of the mind's brilliant capabilities of abstract imagination. (W2, §1)

In the following the coming about and the characteristics of this World of Representations will be explained. Thereto some essential parts and paradigms need to be analyzed individually:

Transcendental Idealism. Matter has extension in space and time and establishes relations within the law of causality. Section 1.1 will be used to explain Schopenhauer's epistemology and how he intends to defend it against realism and scepticism.

The Nature of Representation. The aim of the discussion in 1.2 is to clarify the relation between all representations and the subject, and therefore the prerequisites and foundation of all perception.

Actuality. If you cannot see the world as it is, what is it that you see? Following Kants ideas there is a *world in itself* and a *world for us*. Schopenhauer uses the term *actuality* (*Wirklichkeit*) for the latter. This shall be outlined in the section 1.3.

Sensation. Concrete representations can only result from sensual perception. The process of sensation according to Schopenhauer's understanding will be explained in section 1.4.

About Representations. After clarifying some constraints, those two sections will particularize the coming about of objects based on sensory data. Schopenhauer discriminates between representations formed by direct beholding (1.5) and those representations attained by reflexion (1.6).

1.1 Transcendental idealism

The foundation of Schopenhauer's epistemology can be seen in Immanuel Kant's¹ distinction between *apperception* and the *thing in itself*. The observable world consists of things that can be known by everyday perception and scientific research. Those are the phenomena of the empirical world, which are accessible for our objective knowledge. However, these phenomena are only superficial presentations of what actually is. This assumption could provoke one to scruple, whether the nature of the world can be fully comprehended taken knowledge of the ostensive phenomena alone. Kant concludes that there is a reality beyond the scope of perception and calls it the *thing in itself*. (see also Janaway, 2002, pg. 14) Therewith he is thinking of something with an existence devoid of the involvement of any knowing subject and by that independent of an observer. The empirical reality, on the other hand, is not to be seen as a fabrication or a false illusion. It is 'completely real and by all means that, what it seems to be', but limited by the senses and the intellect of a subject. (W1, §5)

To make this relation between an undoubted empirical reality and a form of transcendental ideality clearer, Schopenhauer quotes a commentary on ancient Indian texts by

¹Immanuel Kant, 1724 - 1804, German philosopher.

Sir William Jones². ‘*On the philosophy of the Asiatics* (Asiatic Researches, vol. iv., p. 164): The fundamental tenet of the Vedanta school consisted not in denying the existence of matter, that is, of solidity, impenetrability, and extended figure (to deny which would be lunacy), but in correcting the popular notion of it, and in contending that it has no essence independent of mental perception; that existence and perceptibility are convertible terms.’ (W1, §1)

Schopenhauer does not want his idealistic perspective to be understood as a doctrine claiming that objects are *created* by the act of a subject – as in Fichte’s³ version of idealism. This would only consider the pure relation between matter and subject. Therefore it would completely neglect the essential non-subjective existence of things, which is a corner stone in Schopenhauer’s transcendental idealism. (W1, §5)

He is obliged to defend his idealistic position against materialistic realism, which was also gaining popularity at that time. So he tries to expose it as a tempting but incomplete theory, because it blatantly overlooks the subject’s involvement in the coming about of its world.

In the following two of Schopenhauer’s arguments against materialism shall be presented. These examples can only help to provide some insights into his assumptions. A profound analysis of his apologia and a discussion on the validity of transcendental idealism will take place in 3.1.

The thing in itself. Schopenhauer assumes a thing in itself, which is not recognizable but nevertheless the foundation of reality. Based on that, he shows materialism, the view that matter (including force fields and energy) is the only substance in the world, does not provide us with a satisfying and self-consistent explanation of the world.

(A1) Space and time are only factors of our apperception.

∴ (A2) Space and time cannot be things in themselves [from A1].

(A3) The world of extended objects, which is matter, lies in space and time.

(A4) The thing in itself is prior to apperception.

∴ (A5) The thing in itself is outside of space and time [from A2 and A4].

(A6) Matter is the thing in itself in materialism.

∴ (A7) Matter has to be outside of space and time [from A5 and A6].

²Sir William Jones, 1746-1794, English philologist, founder of the Asiatic Society.

³Johann Gottlieb Fichte, 1762-1814, German philosopher of German idealism movement.

∴ (A8) Materialism is false [from A3 and A7].

The contradiction of materialism lies in (A8): matter cannot be thing in itself because it would have to be outside of time and space for that (according to A7). Former is denied by (A3). That is why objects are nothing more than representations and a completely materialistic world view is claimed to be unsustainable. (W2, §1)

Knowledge argument. The second argument is identical to the *knowledge argument* mentioned by John Searle⁴:

Der Realismus, der sich dem rohen Verstande dadurch empfiehlt, daß er sich das Ansehn giebt tatsächlich zu sein, geht gerade von einer willkürlichen Annahme aus und ist mithin ein windiges Luftgebäude, indem er die allererste Tatsache überspringt oder verleugnet, diese, dass Alles was wir kennen innerhalb des Bewußtseins liegt. (W2, §1)

The subjective and the objective domain are distinct from each other. The world of objects is perceived by senses and nerve fibers. And the subjective world reveals itself only as ‘images in our head’. Only its self, its own consciousness, is directly experienceable for a subject. Anything else is mediated and influenced by consciousness, which Schopenhauer already considered a brain phenomenon. Therefore it is not directly accessible for knowledge.⁵

To define his position even clearer Schopenhauer sets up a fictive dialogue between matter and subject in their struggle for supremacy in the world. By the end they both come to realize:

So sind wir denn unzertrennlich verknüpft, als notwendige Theile eines Ganzen, das uns Beide umfaßt und durch uns besteht. Nur ein Mißverständnis⁶ kann uns Beide einander feindlich gegenüber stellen und dahin verleiten, daß Eines des Anderen Dasein bekämpft, mit welchem sein eigenes steht und fällt.

⁴John Rogers Searle, born 1932, American philosopher and linguist.

⁵That alone does not deny the validity of naive realism, for it would be unsound due to *genetic fallacy*: A causal explanation of the formation of a conviction, does not prove it wrong. The explanation that the impression of seeing your own hand is caused by light reflections and visual processing, does not deny you are actually seeing your own hand. (Searle, 2006, pg. 281)

⁶What Schopenhauer calls *misconception* is the unjust presumption that object and subject are causally related in any way. According to him, this is no more than an illusive thought.

Dieses Beide umfassende Ganze ist die Welt als Vorstellung, oder die Erscheinung. Nach deren Wegnahme bleibt nur noch das rein Metaphysische, das Ding an sich, welches wir (...) als den Willen erkennen werden. (W2, §1)

Solipsism. Finally Schopenhauer definitely denies a theoretical egoism or solipsism, thus the conception that the own subject is the only thing existing. He has to accept its logical validity but immediately unmasks it as unsuitable for further discussion. Solipsism is just a

kleine Grenzfästung, die zwar auf immer unbezwinglich ist, deren Besatzung aber durchaus auch nie aus ihr herauskann, daher man [an] ihr vorbeigehen und ohne Gefahr sie im Rücken liegen lassen darf. (W1, §19)

Further he impugns that a person can sincerely believe suchlike without being inhabitant of a lunatic asylum.⁷

Furthermore Schopenhauer proposes transcendental idealism as a viable alternative for all forms of scepticism. Scepticism assumes that there is no absolutely safe knowledge about things outside the own consciousness. He can cover these concerns by putting the world of objects not into the unsafe environment but into to the domain of consciousness, where they are knowable. (Janaway, 2002, pg. 30)

Summary. To sum up all aspects of Schopenhauer's version of transcendental idealism it shall be finished with this collection of theses:

[IDa] Our knowledge of the world around us is knowledge of appearances, not of some Ding an sich or thing in itself lying behind phenomena. To say that 'the world is my representation' is, then, to say that each and every spatio-temporal object of perceptual knowledge is a substantially mind-dependent entity whose existence 'hangs ... on a single thread; and this is the actual consciousness in which it exists'

[IDb] The world captured by my representations is mind-dependent in a double sense, inasmuch as objects of perception are conditioned by the knowing

⁷John Searle cites Bertrand Russell thereto: 'As against solipsism it is to be said, in the first place, that it is psychologically impossible to believe, and is rejected in fact even by those who mean to accept it. I once received a letter from an eminent logician, Mrs. Christine Ladd Franklin, saying that she was a solipsist, and was surprised that there were no others. Coming from a logician and a solipsist, her surprise surprised me.' (in *Human Knowledge: Its Scope and Limits*, London 1948, pg. 180) (Searle, 2006, pg. 28)

subject both ‘materially’ and ‘formally’, to use Schopenhauer’s terminology. To say that the subject materially conditions the object is equivalent to saying that external things are representations, and that representations presuppose a subject. To say that the subject formally conditions the object is to say that objects must conform to certain a priori forms and principles contributed by the knowing subject.

[IDc] The idealist slogan that the world is my representation is said to be ‘one-sided’ because it is only concerned with ‘everything that exists for knowledge. Although committed to the view that all objects of perceptual knowledge are mind-dependent, Schopenhauer insists that there is nevertheless some mind-independent reality. This is the thing in itself, known not by means of our perceptual representations, but only (and imperfectly) in self-consciousness as will. (McDermid, 2003)

The presentation in this section has been mainly of informative interest. It was considered necessary scaffolding for the upcoming parts. It is well known that neither Schopenhauer’s idealism, nor his defense attempts are unproblematic. They will be specially addressed in 3.1.

1.2 The nature of representation

Taken this idea from Kant, Schopenhauer assumes that the world of representations follows certain regularities and principles, which eventually can be discovered. He laid the foundation to this bold venture in his 1813 released (1847 essentially revised) dissertation *On the Fourfold Root of the Principle of Sufficient Reason* (*Über die vierfache Wurzel des Satzes vom zureichenden Grunde*). The main ideas from his first major writing persisted throughout his further works. Even in his older years he was still very pleased with his attempts to provide a full-scale framework for all perception of reality. Roughly summarized it can be said Schopenhauer elaborates the idea that all forms of knowledge about the real world and all thinking never occur independently from the properties and constraints of the individual’s mind.

Objects are representation by the subject. Therefore, every subject sees every object of its reality only within its relationship to other objects and therefore never autonomously or pristine from the prior given modes of perception and thoughts. That is why objects or perceptions have to be seen as a system with law-like structures:

Nichts ist ohne Grund, warum es sei.⁸ (FR, §5)

There is a reason within the mind, why tables are comprehended as *tables* and stones as *stones*, why there are concrete (*stone*, *table*) and abstract terms (*unorganic material*, *furniture*), why we perceive the world in the dimensions of time and space and why our actions are guided by motivations. And this reason is given by the properties of subjective knowledge and the nature-given characteristics of human thought.

More precisely, Schopenhauer distinguishes between four kinds of necessities by which human judgment is driven:

1. *Physical necessities* that are following the principle of cause and effect.
2. *Logical necessities* for the correctness of valid logical conclusions based on their premises.
3. *Mathematical necessities* such as $1 + 1 = 2$.
4. *Moral necessities* of acts based on reasons and motives.

Schopenhauer admits that his claim, all perception and cognition is preceded by a reason, is by it not provable or fully understandable.

It is quite impossible to understand. (W1, §14)

And since it is outside of the system of knowledge we are conditioned to circumstantial evidence. The recipient would not just accept this hypothesis as it is, but asks for a reason – and this is exactly what Schopenhauer's tries to express with his claim. (FR, §14) There is no fact without a reason and the search for this reason is a major concern of the intellect. This is also most obvious in the questions asked within the field of science. (FR, §4)

Schopenhauer came to believe that any question for a reason depends on the kind of the concerning object and will eventually lead to one of those four classes of reasons (FR, §16):

Objects of apprehension. Concrete representations are objects of our apprehension-mediated perception of the body and the environment. They were the starting points in the philosophy of Thales from Miletus, ionic nature philosophers, Democritus, Epicurus, Giordano Bruno, and other materialists. (W1, §7) (see also 1.5)

⁸*Nothing happens without a reason.*

Objects of human reasoning. Abstract objects or terms are reflections of concrete or also abstract objects. (W1, §7) (see also 1.6)

Apperception of time and space. Time and space are apriori given prerequisites for the perception and representation of objects. Without them matter would not be conceivable. (W1, §4)

The concept of space allows the perception of local settings and enables coexistence and variety. (FR, §37) Time creates the succession of each other depending moments. (FR, §38) Both are preconditions for causality, which combines time and space: it is the succession at a distinct place at a distinct time. (W1, §4) (see 3.1.2.3)

Willing and motivation. Motivation is the domain of reasons for actions. Unlike the doctrine of Scholasticism, which tried to understand the world as the consequence of a godly act of volition, Schopenhauer has a quite unique way of transcendental willfulness, which is also represented within the body and mind of the individual. (W1, §7) (see 2 and discussion in 3.5)

1.3 Actuality

Schopenhauer's idealism has been already introduced. This section will cover the relation an individual can have with the world and how objects can possibly come into existence.

For Schopenhauer objects do not just live within the environment of an individual. In fact, objects evolve as representations by the intellect in order to comply with the sensory data. From this outer world only *effects* can be sensed and perceived. Their underlying dynamics and properties remain hidden from the observer. Effects are therefore actions appearing on the surface, while the thing in itself, the true nature of the phenomenon, keeps itself concealed.⁹

That is why Schopenhauer postulates:

Ursache und Wirkung ist also das ganze Wesen der Materie: ihr Sein ist ihr wirken. (W1, §4)

⁹It should be mentioned that our conception of matter is also indicating the importance of *covert interactions*. The forces that glue everyday things together can only come about by the interdependent relationships of particles. If you try to describe the qualities of one of those particles you will come to the conclusion that there is not something as a solid building block with distinct properties and spatial extension or location. The only thing that possibly can be said is that there is a region surrounding such a particle in which interactions with other particles are more or less likely.

This relation of cause and effect is called *causality* in Schopenhauer's philosophy. Causes are therefore changes within the material world.

Jede Wirkung ist, bei ihrem Eintritt, eine Veränderung und gibt, eben weil sie nicht schon früher eingetreten, unfehlbare Anweisung auf eine andere, ihr vorhergegangene Veränderung, welche in Beziehung auf sie, Ursache, in Beziehung auf eine dritte, ihr selbst wieder notwendig vorhergegangene Veränderung aber Wirkung heißt. (FR, §20)

There is necessarily an ongoing chain of causal relations, without a beginning or an end. Causes trigger changes that manifest themselves as effects. These effects are causes for further alterations of the current state. It is therefore an automatic process. Seen from a higher perspective, this eventually entails the existence of a whole network of interdependent constraints and causes. (FR, §20)

Schopenhauer denies that the objects itself can be causes. He assumes the immutability of the material substance of an object. That is why only a *state of an object* can be considered as a cause. (FR, §20) Matter is equally present in all things when all specific properties and forms are absent. Therefore *pure matter* is *pure causality* and by that immune to extinction or change. In fact, the principle of causation only affects the concrete appearances or manifestations of matter: their forms and qualities.¹⁰ (FR, §21)

The principle of causality makes the laws of nature to a certain degree explainable. The limiting factor happens to be that all reduction ends at some kind of original natural force. Schopenhauer calls such a thing a *qualitas occulta*. As such it can only be described by metaphysical explanation, for it goes beyond the domain of appearances and therefore beyond the scope of all natural sciences. These natural forces are the condition that had to be met to enable perception within the system they made possible. (FR, §20)

¹⁰This view is nowadays also well-established in modern physics: the incineration of a table means for us that the object *table* has ceased to exist in its form and with its qualities. On the other hand, nobody assumes the material substance (the atoms) was eliminated by the fire. In fact, they only have changed their form. Furthermore, before it was set on fire, this table has been interacting with its environment. By that, particles of the table have constantly been replaced by particles from its surrounding. However, its form and qualities have stayed the same. Even if the table would no longer bear a single atom, which it used to have in the beginning, it would have remained the same object. Most relevant for the formation of intellectual objects seems to be the special configuration, in which it appears. The material substrate might be secondary.

1.4 Sensation

Die Sinne sind bloß die Ausläufe des Gehirns, durch welche es von außen den Stoff empfängt (in Gestalt der Empfindungen), den es zur anschaulichen Vorstellung verarbeitet. (W2, §3)

With this showcase sentence Schopenhauer makes two clear statements, which are obvious compounds of his philosophy and repeated at several positions:

1. The brain is responsible for all representations, imaginations and thoughts of a subject.
2. The brain has some form of relationship with environment via sensory organs.

The real world, as perceived by the subject, is created as a *brain phenomenon* and therefore cannot exist independently from a brain. (W2, §1) On the one hand, the world does not subsist absolutely objective and detached from a knowing being. On the other hand, it cannot emerge without the special, complex, even *mysterious and wonderful* processes of the brain.

Having senses alone would not suffice to create an impression of the outer world, as it actually exists:

Was das Auge, das Ohr die Hand empfindet, ist nicht die Anschauung: es ist bloße Data. (W1, §4)

It is the job of the brain to combine all those sensory data and to form representations. This is accomplished by the means and functions of apprehension. From the sum of these processes the objective world can emerge. Schopenhauer calls it the World of Representations. Therefore we cannot assume some kind of continuity between mental objects and things of an outer world. The subject has only indirect knowledge of them, mediated by nerve fibers, which are extensions of the brain. Taken alone, these data are uninterpreted. They can only get meaningful for the individual by the act of its intellect. Schopenhauer explains this by exemplification: The touching of the surface of a table provides nothing more than sensations. This is not sufficient to create some kind of representation of solidity or coherence of matter. (FR, §21)

Man muss von allen Göttern verlassen sein, um zu wähen, (...) dass eine solche Welt da draußen ganz objektiv-real und ohne unser Zutun vorhanden

wäre, dann aber, durch die bloße Sinnesempfindung, in unseren Kopf hineingelange, woselbst sie nun, wie da draußen, noch einmal dastände. (FR, §21)

The sensations arise by external and internal influences on the body. These are generally not noticed or rated by itself as long as they are within a known and used extent, and as such not unpleasant or painful. That is to prevent attention to be drawn at simple sensations. The intellect should focus on elaborating concrete representations, which are more useful for the subject's mind.

Schopenhauer knows of those senses, which are for him related to the ancient elements or physical conditions: sense of touch (earth, solidity), gustatory sense (water, fluidity), olfactory sense (vapor, smell), auditory sense (air, the permanent elastic), and visual sense (fire, light, the imponderable). According to him, warmth is not an object of senses, but it is a general feeling directly affecting the will of an individual. (W2, §3) Albeit his comparisons to the ancient element doctrine seem far-fetched and constructed, it will be discussed in section 3.2.1 that the other intuitions were quite plausible. The stated link between temperature sensation and motivation can be seen as quite modern. Both processes make use of a structure called the *hypothalamus*, which makes some sort of inter-dependending relation likely.

According to Schopenhauer, the highest and most important of all senses is vision. Seeing is mostly independent from our will, it has the longest sensation range and is finely distinguished. After that follows hearing and touching, which have also high importance in creating objective representations. Smell and taste are the most subjective forms of perception. Generally, there is no possibility of unbiased sensations by the latter, because they always coincide with favorable or displeasing feelings.

Seeing is highly related with the means of apprehension. Hearing would be a function of reasoning, for it is a prerequisite for language and rational thinking. This assumption by Schopenhauer is highly problematic, for he later on puts deaf-mute people at the same level as animals, which are also incapable of speaking. Finally he assumes a relation between the olfactory sense and memory. (W2, §3) Indeed there is neurobiological evidence for a high connectivity between the olfactory nodes and the amygdalae, which are responsible for emotional memory. (Bear et al., 2006)

Schopenhauer's presumptions were by all means at the state of science of that time. He also studied and worked on the anatomy and physiology of sensory organs and the brain as known in the 19th century. To compare his explanations to the modern neurobiological positions a few fundamentals will be introduced in section 3.2.

1.5 About concrete representations

In the last section the fundamental idea that sensory organs provide the brain with data about the individual's surrounding world has been discussed. In the following it should be explained how Schopenhauer thinks that those sensory inputs are congregated and transformed into representations, which give rise to the world of concrete objects.

The first kind of mental contents are ostensive representations. In contrast to representation imagined by the domain of phantasy and all forms of abstract terms, they are *empirical* representations. These representations do not arise out of only internal connections in the mind, but by the sensory perception of the environment. Next, this procedure does not end at single and unique percepts, but it takes the whole empirical reality of the subject into consideration and combines them by the factors of space, time and causality. (FR, §17)

Denn die Empfindung jeder Art ist und bleibt ein Vorgang im Organismus selbst, als solcher aber auf das Gebiet unterhalb der Haut beschränkt, kann daher an sich selbst, nie etwas enthalten, das jenseits dieser Haut, also außer uns läge. (...) Erst wenn der Verstand – eine Funktion, nicht einzelner zarter Nervenenden, sondern des so künstlich und rätselhaft gebauten, drei bis gegen fünf Pfund wiegenden Gehirns – in Thätigkeit gerät und seine einzige und alleinige Form, das Gesetz der Kausalität, in Anwendung bringt, geht eine mächtige Verwandlung vor, indem aus der subjektiven Empfindung die objektive Anschauung wird. (FR, §21)

Our intuitions of time and space are essential principles for perception of effects. They set up the framework for a part of cognition that is called *apprehension* or *intellect* by Schopenhauer. Its only function is the recognition of causality, which is concluding from the observed effect to its underlying cause.

Tactile sensations, for example, are used to construct a mental representation of an object that applies counter-pressure on the hand. Hardly audible sounds are analyzed for their intensity and direction, to finally allow judgments about the nature of the noise. (W2, §2)

The concepts of space, time and causality are thus present a priori (before all apperception):

Physiologisch ist er eine Funktion des Gehirns, welche dies so wenig erst aus der Erfahrung erlernt, wie der Magen das Verdauen, oder die Leber die Gallenabsonderung. (FR, §21)

How sensory data are finally experienced is highly dependent on the the nature of the given brain:

Demnach fällt gewiß das Bild der selben Aussicht in verschiedenen Köpfen, auch bei gleicher Schärfe ihrer Augen, so verschieden aus, wie etwa der erste und letzte Ausdruck einer stark gebrauchten Kupferplatte. (W2, §2)

Consequently we do not experience anything in the outer world in its completeness, but only indirectly by its effect on our body, which is mediated by our sensory organs and then finally constructed as an object in the shape of a concrete representation. The world is therefore not purely sensual, but intellectual. First changes affecting the body are sensed and then immediately put into a causal relation within the domain of intellectual apprehension. (W1, §4)

Aber wie mit dem Eintritt der Sonne die sichtbare Welt dasteht; so verwandelt der Verstand mit EINEM Schlage, durch seine einzige, einfache Funktion, die dumpfe, nichtssagende Empfindung in Anschauung. Was das Auge, das Ohr, die Hand empfindet, ist nicht die Anschauung: es ist bloße Data. Erst indem der Verstand von der Wirkung auf die Ursache übergeht, steht die Welt da, als Anschauung im Raume ausgebreitet. (W1, §4)

This process occurs generally automatically, unconsciously and without reflection or thinking (abstract or secondary knowledge). It is by that independent from the means of reasoning. (FR, §21) Even reading or hearing of words entails an unconscious moving of thoughts to their inherent meanings, disregarding the literal world and focusing on its term. Therefore one can completely forget what language one is currently reading in. This circumstance only raises conscious attention, when a word was read, but not satisfyingly understood.¹¹ (W2, §2)

Then, this ability is not limited to the human kind. The described perception process is likewise happening in animals, although their sphere of possible knowledge is more restricted and they are not capable of reasoning. Therefore they lack language and abstract thoughts. But still, according to Schopenhauer, animals form the same kind

¹¹Exactly this phenomenon mentioned by Schopenhauer comes into effect in the Stroop effect, named after its discoverer John Ridley Stroop (1897–1973). It has been shown in several experiments that it can be quite a challenge to overcome automatic psychological processes to change for example the way of handling the current information. To demonstrate the Stroop effect an experimental subject is shown a color word (e.g. RED or GREEN) that is written in a non-corresponding color (e.g. blue or yellow). The participant is now instructed to read the presented word (RED, GREEN) and ignore the font color, or likewise call the color (blue, yellow, etc.) and ignore the written word.

of representations, which influence their actions. However, most of their properties and capabilities are due to instincts. (W1, §6)

Schopenhauer's conviction that the world is influenced by the factors of intellect and so dependent on its constraints and possibilities, makes his critical position towards realism and materialism respectively at least comprehensible:

Alles Objektive, Ausgedehnte, Wirkende, also alles Materielle, welches der Materialismus für ein so solides Fundament seiner Erklärung hält, daß eine Zurückführung darauf (zumal wenn sie zuletzt auf Stoß und Gegenstoß hinausliefe) nichts zu wünschen übrig lassen könne, - alles Dieses, sage ich, ist ein nur höchst mittelbar und bedingterweise Gegebenes, demnach nur relativ Vorhandenes: denn es ist durchgegangen durch die Maschinerie und Fabrikation des Gehirns und also eingegangen in deren Formen, Zeit, Raum und Kausalität, vermöge welcher allererst es sich darstellt als ausgedehnt in Raum und wirkend in der Zeit. (W1, §7)

Therefore, it would be invalid to assume that a materialistic worldview, as used in natural sciences as a methodological paradigm, can provide more than relations between ostensive objects of the empirical world. Science can give no complete explanations of the world because it is always trapped within the World of Representation due to its fundamentals. That is why it always misses the *inner kernel*, *essence* or *true nature* of the world. The objective world, or the World of Representations, is only the outer shell of the world. It covers the thing in itself at the inside. (W1, §7)

Nevertheless, although our objective knowledge is fundamentally limited, it is not useless:

Bei aller transzendentalen Idealität behält die objektive Welt empirische Realität: das Objekt ist zwar nicht Ding an sich; aber es ist als empirisches Objekt real. Zwar ist der Raum nur in meinem Kopf; aber empirisch ist mein Kopf im Raum. (W2, §2)

Schopenhauer considers his epistemology originally innovative, for it does not just emanate from an object *or* a subject. His foundation is the idea that experience and knowledge is neither purely subjective, nor solely objective. In fact, it is the congregation of the objective and the subjective in equal parts. (W1, §7)

1.6 About abstract representations

Besides apprehension with its World of Concrete Representation the human brain is enriched by the capabilities of reasoning. Schopenhauer calls it aptly a *higher potentiating* of consciousness, which ultimate function is to reflect on the world of ostensive, present and immediate perceptions. To do so reasoning forms *abstract representations* or *terms*, which can be processed independently from current experiences. (W1, §8) Abstraction can be compared to *dropping unnecessary luggage* for the sake of easier thinking maneuvers by focusing on the essentially important. (W2, §6)

This enables us to draw complex conclusions, to give non-obvious explanations and reasons, to consider and communicate things distant in time and space, and finally to let our actions be guided by abstract motives in order to balance the most blatant affects and drives. (W1, §8)

This is the reason why Schopenhauer warmly recommends Seneca's¹² suggestion:

Si vis omnia subicere, te subice rationi (ep. 37) (W2, §6)

Terms could also be called *representations of representations*. Therefore they are not more than a different level of observation with a different scope of content and meaning. But for all that, they cannot give rise to anything genuinely new that was not already in some form present as a concrete representation. Schopenhauer compares this idea with the layout of a building. The foundation of the house is the world of concrete representation bearing all concrete terms. Set upon this, further steps of reflection constructing higher levels of abstraction. (W1, §9)

Schopenhauer exemplifies the different aspects of knowledge in the following: a trained billiard player might have a complete understanding of the mechanics of rolling and colliding balls by immediate and direct representation of them, which is completely sufficient for playing. On the other hand, a scientific mechanic could also have abstract knowledge of the ongoing processes in a law-like manner. For the actual game this knowledge would be useless, if one is unable to transfer it into the shape of intuitive and concrete operation. Nevertheless abstract terms can exert their benefit in another domain. This sort of knowledge can be used for abstract planning due to their independence from proximate factors. Secondly, it enables collaboration amongst peers because they can be communicated. (W1, §12)

Therefore abstract terms and ideas do not exclusively have to arise from own experience. Statements or exemplification of others, teachings, doctrines, traditions or writings, can

¹²Lucius Annaeus Seneca, 4 BC - 65 AD, Roman philosopher, politician and educator.

obtain them. That is why the existence and spread of abstract ideas can entail enduring and wide-ranged consequences. (W2, §6) One of those ideas are the methods used in science in order to reason in a structuralized way about concrete phenomena, to formalize their abstract interpretations, and to order bits and pieces of knowledge. (W1, §14)

Schopenhauer warns about the possibility of fallacy and historical mistakes that might occur as a side effect of this easy distribution of ideas. Knowledge that is only acquired in an abstract form without any involvement of intuitive understanding is therefore most prone to this error. Information obtained from books in absence of any related personal experience and questioning, is therefore only a minor form of knowledge. It completely neglects the factors of one's own judgment.

Lesen heißt mit einem fremden Kopfe, statt des eigenen, denken. (P2, Kapitel XXII. Selbstdenken, §261)

Then he also advises against over-estimating the powers of reasoning. This would be e.g. the hope to gain some kind of *immediate, metaphysical or extrasensory* knowledge by abstract thinking. (W2, §6) Reasoning can only increase the possibilities to access knowledge that is already in some form existing. It helps to see things clearer but does not create anything originally new and innovative.

1.7 Conclusion

Two aspects mentioned in this chapter contain implicit assumptions and entail consequences that need to be discussed in a little more details.

First there is Schopenhauer's concept of subjectivity. The phenomenon of subjectivity or first person experience is in our times widely considered as the *hard problem of consciousness*. (Chalmers, 1995) While science and enlightenment by rationality have been flourishing and have provided great insights into the nature of our existence, their methods might fail in solving this mystery. Schopenhauer submits to the idea that *experience*, the feeling of *what is it like*, cannot be rationally explained or known. In the classification by Searle (2006, pg. 157f) Schopenhauer would be considered a *mystic*.¹³ This is because of his belief that the subject was out of reach for scientific methods.¹³ Nevertheless he gives some explanations on the properties of the subject, which existence is so essential for his philosophy.

¹³In this concern, he would line with present day's philosophers like Nagel (1974) and McGinn (1989).

And secondly, we will discuss Schopenhauer's notion of causality. Various ideas of causation have been widely discussed in science and humanities. (White, 1990, see for a brief overview) Therefore, it seemed essential to devote some space and time to Schopenhauer's position to avoid misconceptions originated in the historical and contemporary dissension.

1.7.1 The subject

The subject is the nexus of the empirical World of Representations and the essential World of Will. It can be understood in two aspects: the knowing subject that has been discussed so far, and the willing subject. First can be seen as the sum of intellectual understanding, reflection and all knowledge. It is the bearer of the World of Representations. Hence it knows everything, except itself. Although reflection can help to gain insights into some cognitive states, it never achieves a level of full understanding. The willing subject, on the other hand, lacks all forms of insights and knowledge. It is the affective and voluntary side of selfhood. (Zöller, 1999, see also) To explain this more vividly, Schopenhauer uses a metaphor by the German poet Gellert¹⁴:

In Wahrheit aber ist das treffendeste Gleichniß für das Verhältniß Beider der starke Blinde, der den sehenden Gelähmten auf den Schultern trägt. (W2, §19)

It might now be interesting to know how this subject with its both aspects comes into being.

In materialism it is assumed that everything subjective emerges by some material cause. Schopenhauer, on the other hand, rejects all explanations based on this premise. There is no relation between subject and object or matter for him. This is because of his idea that the concept of causality is limited to the objective world. It therefore does not apply to anything that has not been derived by the functions of intellect. (Schopenhauer, 2005, 1998, 1988, 1844a, §5)

Like materialistic theories, Schopenhauer cannot give an explanation for the genesis of the subjective. He merely continuously adheres to its necessity of existence and its distinctiveness to everything we know about the material world. Our analytic understanding fails at this point, because the knowing subject cannot be its own object of knowledge. It is only able to understand things created or experienced by itself. Because

¹⁴Christian Fürchtegott Gellert, 1715 - 1769, German poet, writer and philosopher. (Note: not J.F. Gellert as written in Zöller (1999) who obviously misinterpreted a Google search result.

it is beyond the scope of empirical knowledge, which is restricted to the objective world, Schopenhauer has to make a transcendental argument for the existence of the subject and its fundamental role in his theory.

There is the objection that Schopenhauer needs to explain, how the subject can gain knowledge about the material world. So far it has been said that causes can lead to changes in the body, which are felt by sensory organs. This sensory data are then used by the mental function of apprehension to identify their cause to create a concrete representation. The explanatory gap would be the transformation of sensory data as material phenomenon of the objective body into the domain of subjective consciousness. (Janaway, 2002, 22) It is correct that Schopenhauer avoids to give a direct explanation for this. The reason is that he regards it as a pseudo problem. This hitch can only arise when one tries to understand the subjective world by the means of the objective world, which obviously entails dilemmas like this. But the subjective world is not something substantially different, for they are both aspects of the same thing in itself. Of course, this defensive argument might be an unsound self-immunization of the questioned theory. However, it remains conclusive within its scope of validity and is in Schopenhauer's version of transcendental idealism not avoidable.

1.7.2 Causality

Because recognizing causality is the ultimate capacity of apprehension, Schopenhauer's exact understanding of causality has to be defined. Opposed to Aristotle's¹⁵ doctrine of causation¹⁶, which was rejected as unsuitable, Schopenhauer understands it in a rather narrow sense:

JEDE VERÄNDERUNG IN DER MATERIELLEN WELT KANN NUR EINTRETEN,
SOFERN EINE ANDERE IHR UNMITTELBAR VORHERGEGANGEN IST: dies ist
der wahre und ganze Inhalt des Gesetzes der Kausalität. (W2, §4)

Schopenhauer's use of causality therefore only refers to objects from the World of Representations and by no means anything non-subjective, such as the thing in itself. Since

¹⁵ Aristotle, 384 BC - 322 BC, Ancient Greek philosopher

¹⁶ In Aristotle's *Physics* four kinds of causations are described: (a) *causa materialis* is the influence of the material parts on the whole entity composed by them (e.g. material cause for table is wood). (b) *causa formalis* describes the effect of the formal intrinsic idea to its manifestation (e.g. the formal cause for any given stone is the non-concrete ideal form of a stone). (c) *causa efficiens* relates to the agent that is responsible for the coming about of the effect (e.g. the efficient cause of a table is the carpenter who built it). (d) *causa finalis* is the teleological purpose of something (e.g. the final cause of the table is for the carpenter to sell it for making a living).

these changes happen within time and space, the property of temporal succession can be used to define the earlier event as *cause* and the latter state as *effect*. (W2, §4)

How exactly can we identify this cause with the capacities of our intellect? The obvious problem is that the true *cause* of a change is hard to determine. Within the terminology of modern physics we would find no definition for this term, for we can only relate to observable or describable *effects*. (Vollmer, 1986, 2007, pg. 37f) This perspective matches Schopenhauer's concept of empirical knowledge: only effects are empirically experienced. On the other hand, the term *cause* is only a subjective attribution.

What might be unsatisfying is Schopenhauer's avoiding to exactly explain when to consider a causal explanation given by the intellect true or false. He rhetorically ignores this problem by introducing following nomenclature: What is correctly perceived by apprehension is called *reality*. The opposite of this is the *false illusion*. Besides that, there are different levels of intellectual capabilities. Intelligence is therefore the acute and penetrative usage of apprehension. Anybody not able to apply the law of causality in a suitable way, who draws wrong conclusions, like believing in miracles or magic, can be called dumb. (W1, §6)

Schopenhauer contradicts Hume's¹⁷ assumption that a concept of causality would eventually arise by routinely seeing regularities in observations. The periodical succession of day and night could be a classical counter-example for this idea, for none would want to consider one causing the other.¹⁸ Then he also disagrees with Kant's opinion that we can only grasp the succession of states when we understand them as cause and effect. Schopenhauer reverses this idea. We a priori understand succession and use this concept to derive and identify cause and effect. (W2, §4)

Besides this short but important clarification, we will return to this topic in section 3.1.2.3 to discuss its plausibility.

¹⁷David Hume, 1711 - 1776, Scottish philosopher, economist, and historian.

¹⁸This definition gives rise to what is called *cum hoc ergo propter hoc fallacy*. It is of special importance for the interpretation of statistical results. Practically said: no correlation alone can entail causation.

Chapter 2

The World as Will

The starting point of Schopenhauer's ontological contemplations is subjective experience, which is richer and more extensive than the world of representations alone. When observing the own body, one must come to the conclusion that it is not just an object amongst other. It is also experienced according to aspect that he calls *Will*. This Will is the footing of any drive, motivation, acting and finally even thinking. This feeling of willingness is the most profound and most direct form of experience at all, for it manifests itself within our body and the sum of its needs. (W1, §18)

This chapter will cover Schopenhauer's metaphysical claims of a transcendental Will, as far as they are essential or interesting for the understanding of his theory of mind.

2.1 The dual aspect of Will

Erscheinung heißt Vorstellung und weiter nichts: alle Vorstellung, welcher Art sie auch sei, alles OBJEKT, ist ERSCHEINUNG. DING AN SICH aber ist allein der WILLE: als solcher ist er durchaus nicht Vorstellung, sondern TOTO GENERE von ihr verschieden: er ist es, wovon alle Vorstellung, alles Objekt, die Erscheinung, die Sichtbarkeit, die OBJEKTIVITÄT ist. (W1, §21)

This *force of nature* can be experienced in two ways. On the one hand, it presents itself as *suffering*. By suffering Schopenhauer means the felt motivation to appease a need or desideratum, for which it is assumed to end the suffering. When the body craves for nourishment, the individual will feel hunger. That is why the subject will try to becalm this need by obtaining nutrition. In a fight against enemies it will feel an urge to survive – the *Will for Life*. Besides this concretely felt consequences of the Will, there is an

alternative form of knowledge, which is special to humans: the insight that the *Will* is the thing in itself. It is the fundamental principle of everything existing. (W1, §19)

Even the most accurate explanations about the nature of the world does not suffice to understand its inner essence and why it is, what it is. Therefore we can only have some kind of experiential intuition about it. (W1, §20)

Schopenhauer concluded that the Will in the shape of the thing in itself is causeless, undirected, without any reason or necessity – and therefore, ultimately free. Then, it is not the product of a supernatural subject, for the Will itself initially makes the distinction between subjects and objects possible. The only thing that can be said about the Will is that it constantly strives and wills.

In contrast, within the domain of individual experience the Will reveals itself as reasonable by motives, focused on a concrete desired goal, with intentional purpose. This is the individual's essence of the Will and only one of its possible forming. Because the individualized Will is committed to necessities, it is no longer free. (W1, §29) Due to the undeniable fact that this is so important for human action, it shall be discussed properly in section 3.5.

When the human individual reflects on what it internally feel as the own motivations, it can eventually come to realize that this immanent Will is present in whole nature. As such, it can be seen in the drives and the instinct of animals, adaptation processes in plants or in the behavior of the inanimate matter, which can be described by our laws of physics. All those processes occur necessarily and without any exception the way they are supposed to. Schopenhauer calls them individual appearances, manifestations or objectivations of the Will. (W1, §21) By that he does not imply that a dropped stone wants to hit the ground or that a plant wants to grow towards a light source because of their own decisions. They would just behave according to their nature, in a way this has been determined by the Will. Therefore this conception has nothing to do with any conscious experience of Will, least of all with a reflexion of this experience. Only higher objectivations of the Will, thus animals and specially humans, can gain this form of subjective knowledge:

Spinoza¹ sagt (*epist.* 62), daß der durch einen Stoß in die Luft fliegende Stein, wenn er Bewusstsein hätte, meinen würde, aus seinem eigenen Willen zu fliegen. Ich setze nur noch hinzu, daß der Stein Recht hätte. Der Stoß ist für ihn, was für mich das Motiv, und was bei ihm als Kohäsion, Schwere, Beharrlichkeit im angenommenen Zustande erscheint, ist, dem innern Wesen

¹Baruch Spinoza, 1632 - 1677, Dutch philosopher and advocate of pantheism (or panpsychism).

nach, das Selbe, was ich in mir als Willen erkenne, und was, wenn auch bei ihm die Erkenntniß hinzuträte, auch er als Willen erkennen würde. (W1, §24)

Schopenhauer's decision to define the thing in itself as *Will*, which eventually is such a human concept, looks at first sight as an unsound anthropocentric generalization and should raise critical questioning. Just because an individual experiences an act of will when raising the arm, does not entail that there should be such a principle in inanimate nature, as well. Schopenhauer knows about that and saw himself obliged to explain his choice. What he means when writing about the term *Will*, is only in our objectivation what we experience as our individual will. It reveals itself in the form of experienceable motivation. If we were one of the above-mentioned stones, we would experience it in another form; if we were able to experience anything, of course.

Since there cannot be any objective representation of the thing in itself and Schopenhauer nevertheless would like to speak about it in some way, he decided to *borrow* the term from its, as he says, highest, most accomplished, clearest, and most unfolded appearance: the human will. By that he clearly extends the sphere of meaning of the term *will*, which is a valid argumentation principle (*denominatio a potiori*). Therefore, when talking about the Will in nature, he does not at all imply a falling stone having humanlike will, motives and reasonable actions.

By naming it *Will* he avoids using an arbitrary and abstract term, because in that case one 'could name it however one likes: the name would stand tall as a bare sign of an undetermined value' (own translation). But when he calls it *Will* he wants to highlight its relationship to what is intuitively known. This is why the self-evident but more neutral term *force* would be too weak and empty for what he wants to achieve. This conception could tempt the reader to reduce the Will to something that is known as forces within the world of representation. The Will reaches far beyond that. What we experience as Will is immediately known as our own essential character and not just some kind of objective causal relation. (W1, §22)

Führen wir daher den Begriff der KRAFT auf den des WILLENS zurück, so haben wir in der That ein Unbekannteres auf ein unendlich Bekannteres, ja, auf das einzige uns wirklich unmittelbar und ganz und gar Bekannte zurückgeführt und unsere Erkenntniß um ein sehr großes erweitert. Subsumiren wir hingegen, wie bisher geschah, den Begriff WILLE unter den der KRAFT; so begeben wir uns der einzigen unmittelbaren Erkenntniß, die wir vom innern Wesen der Welt haben, indem wir sie untergehen lassen in einen aus

der Erscheinung abstrahirten Begriff, mit welchem wir daher nie über die Erscheinung hinauskönnen. (W1, §22)

2.2 The thing in itself and its objectivations

Taking for granted that human beings seek knowledge of the foundation and reason of any appearance, and assuming their drive to understand it within their intellectual framework, they will ultimately face two limitations. On the one hand there are constraints concerning the understanding of the own world. On the other hand, reasoning *essentially* fails, when it has to face a question that lies beyond this world. Therefore the intellect cannot reason why the world is what it is, or why the forces of nature behave the way they do.² And this is, how Schopenhauer understands the world educed by the Will: It is not reasonable, thus irrational. It is completely free and without necessity, therefore arbitrary. (W1, §24)

Der Wille als Ding an sich liegt [...] außerhalb des Gebietes des Satzes vom Grund [note: see section 1.2 on the concepts in FR] in allen seinen Gestaltungen, und ist folglich schlechthin grundlos, obwohl jede seiner Erscheinungen durchaus dem Satz vom Grunde unterworfen ist. (W1, §23)

Next, Schopenhauer considers the Will as a unique whole, which is outside our apperception of space and time. It is not like an individual or a term *one*, but like something which simply has not the possibility of multitude. Thus the so called *principium individuationis* is alien to it.

This unique Will is the reason for the diversification and plurality of all appearances. It *objectivates* itself as manifestations and within those no longer knowable as a whole. It becomes an individual appearance amongst so many. It eventually reveals itself as their inner essence and can be noticed in the form of distinct levels of objectivations in nature:

Von dieser [Sichtbarkeit oder seiner Objektivation] ist ein höherer Grad in der Pflanze, als im Stein; im Thier ein höherer, als in der Pflanze: ja, sein

²Based on our knowledge we can conclude that the exact adjustment of the forces of nature is arbitrary, but obviously necessary for our existence. Models in theoretical physics clearly show that slightest variations in one of the natural constants known to us would entail that the universe could not possibly exist in this form. Small changes within the four fundamental forces (gravitation, electromagnetism, weak and strong interaction) would have prevented the formation of matter either by lack of coherence from the beginning or would have caused an initial collapse, if forces of attraction were too high. We therefore come to the conclusion: ‘*Cogito, ergo mundus talis est.*’, which is also known as the anthropic principle. (see Vollmer, 1986, 2007, pg. 61f and references there)

Hervortreten in die Sichtbarkeit, seine Objektivation, hat so unendliche Abstufungen, wie zwischen der schwächsten Dämmerung und dem hellsten Sonnenlicht, dem stärksten Ton und dem leisesten Nachklänge sind. (W1, §25)

A level of objectivation is generally comparable to a platonic³ form⁴:

Ich verstehe also unter IDEE jede bestimmte und feste STUFE DER OBJEKTIVATION DES WILLENS, sofern er Ding an sich und daher der Vielheit fremd ist, welche Stufen zu den einzelnen Dingen sich allerdings verhalten, wie ihre ewigen Formen, oder ihre Musterbilder. (W1, §25)

The simplest and lowest objectivation of Will are the natural forces that have their appearance in anything material. Succeeding after the things of inanimate nature are the plants, then the animals and finally as the highest objectivation the human beings. The higher the degree of objectivation has developed within an individual, the higher its distinctiveness and the wider its scope of possible knowledge. Therefore, the cohesion of a stone, the alignment of plants towards light attraction, the drives, instinct and intelligence in animals and human perception, cognition, and motivation foot on the same principle: the Will. Taken alone, they are all without a reason, for there is no reason why the Will reveals itself in their particular form.

Schopenhauer therefore criticizes the attempt to compare or reduce human will to the succession of physical processes. Even though he considers our actions as determined (see section 3.5), they are not to be seen in the same way as physical collision processes. A reduction like that might be logically possible, but leads to nothing. It would miss the essential property out that is being discussed.

Der gegebenen Ansicht gemäß, wird man zwar im Organismus die Spuren chemischer und physischer Wirkungsarten nachweisen, aber nie ihn aus diesen erklären können; weil er keineswegs ein durch das vereinigte Wirken solcher Kräfte, also zufällig hervorgebrachtes Phänomen ist, sondern eine höhere Idee, welche sich jene niedrigeren durch ÜBERWÄLTIGENDE ASSIMILATION unterworfen hat. (W1, §27)

A higher objectivation can therefore compete against a lower objectivation. In a human being this can be seen for example when willingly raising an arm. The higher objectivation successfully wins against the lower one. But this effect is limited. After a given

³Plato, 428 BC - 248 BC, Ancient Greek philosopher.

⁴*Forms* (or *Ideen* in German) are abstract, pure, ideal and prototypical templates or generalized features of all those concrete objects incorporating the form.

time, chemical processes fail to provide the muscle fibers with nutrition, causing fatigue. Will power is not sufficient anymore and material facts cause the arm eventually to drop. Therefore, we have a permanent interaction between higher and lower levels of objectivation. This also causes an obvious enduring fight within nature: animal life has to be nourished by vegetative life and is itself food for other animal life. That is why Schopenhauer comes to the pessimistic conclusion that the *Will for Life* feeds on itself.

In consecution of single levels of objectivations the human being is understandable as part of this succession. Within this perspective there is a double aspect of necessity. The *inner necessity* is a necessary order within the organism that enables its functioning and self-preservation. *Outer necessity* lies within the relationship between all inorganic and organic parts of nature. In this way Schopenhauer understood any teleology in nature. (W1, §28)

2.3 Conclusion

For Schopenhauer Will bears two distinct meanings. On the one hand it is the immediate experience of needs by an individual. Then on the other hand, it is the thing in itself, independent from all subjectivity.

As thing in itself, as a prerequisite for everything being, the existence of the Will cannot be proven, what Schopenhauer never attempts to do. He assumes that it should be intuitively obvious and find easily affirmation for its plausibility and explanatory capacity. But this definition raises some questions that have to be discussed. A key issue seems to be, if Schopenhauer's conception contradicts current positions in science. This matter shall be addressed in section 3.4.

Next, the consequences entailing this hypothesis for the actions of a human individual are of interest. The importance of this concern is also to be seen that *Free Will* has always been held dear in philosophy. Especially nowadays, it is a battlefield of different positions within an interdisciplinary discourse. Schopenhauer has some remarks of high importance. We shall attend to them in section 3.5.

Although already implicitly mentioned, some aspects of Schopenhauer's concept of Will have to be made explicit and observed from another perspective.

First the question for the ultimate goal of the Will suggests itself. What does the Will will? The Will itself has no intentionality, for intentionality would require an objectivity on which it can be directed to. This is not possible for the Will, because it already exists before any distinction between object and subject. Any tendency can therefore only be

understood within the limits of its specific objectivation: e.g. a plant leans towards the sun light, an animals wants to hunt its prey and a human being devotes his life to help the poor. Such statements are not possible for the Will as thing in itself.

Then it might be unclear why the Will wants. The fact is, although, that this question cannot be answered because the transcendental Will is outside the scope of such questions. It is not within the objective world and therefore not obliged to the *Satz des Grundes* (as discussed in 1.2). Thus asking for reasons – the why? – is valid in material processes (causality), in human judgments (logic) and actions (motives). The fact that the Will *wants* is part of Schopenhauer's transcendental premises.

The question of ownership of the Will can be answered easily. Who is the bearer of the Will as thing in itself? In Schopenhauer's philosophy this would be yet another pseudo problem. The Will in its form as thing in itself has no bearer. This is because only a subject could have this kind of ownership, but this very subject can only come about by the Will itself. Therefore, there is not something as an subjective god bearing the Will and an un-subjective god would be a pointless assumption.

Aber sogar auch die Annahme irgend einer von der Welt verschiedenen Ursache derselben ist noch kein Theismus. Dieser verlangt nicht nur eine von der Welt verschiedene, sondern eine intelligente, d.h. erkennende und wollende, also persönliche, mithin auch individuelle Weltursache: eine solche ist es ganz allein, die das Wort Gott bezeichnet. Ein unpersönlicher Gott ist gar kein Gott, sondern bloß ein mißbrauchtes Wort, ein Unbegriff, eine *contradictio in adjecto*, ein Schiboleth für Philosophieprofessoren, welche, nachdem sie die Sache haben aufgeben müssen, mit dem Worte durchzuschleichen bemüht sind. (P1, Fragmente zur Geschichte der Philosophie, §13)

Finally it might be asked, whether assuming a transcendental Will, does not render all pursuit for knowledge completely absurd. Any question for whatsoever could have an ultimate explanation simply as being a consequence of the Will. Schopenhauer strongly disagrees with this idea, for it is pointless to do so, when other explanations are possible or necessary:

Man darf, statt eine physikalische Erklärung zu geben, sich so wenig auf die Objektivation des Willens berufen, als auf die Schöpferkraft Gottes. [...] da muss z.B. jede Bewegung, obwohl sie Willenserscheinung ist, dennoch eine Ursache haben, aus der sie in Beziehung auf bestimmter Zeit und Ort, d.h. nicht im Allgemeinen, ihrem inneren Wesen nach, sondern als EINZELNE Erscheinung zu erklären ist. (W1, §27)

The same applies, if you deduce everything to the act of god. By that you do not really explain anything, gain no new knowledge and solve no problem:

Denn die Welt Gott nennen heißt nicht sie erklären: sie bleibt ein Rätsel
unter diesem Namen, wie unter jenem. (W1, §27)

Therefore Schopenhauer argues to use the given intellectual capacities whenever and as far as possible.

Chapter 3

Discussion

3.1 Schopenhauer's idealism analyzed

In the first discussion section the already denoted complex of problems in Schopenhauer's idealism shall be addressed. Because the following should not be an entirely destructive criticism, the most fundamental claims will be elaborated and possible directions for defending them will be sketched. Needless to say, a final solution cannot be intended within the scope of this thesis.

3.1.1 The anatomy of Schopenhauer's argumentation

McDermid (2003) eloquently shows in his work that none of the arguments given by Schopenhauer really suffice defending transcendental idealism. Partly they contain false conclusions or other fallacy. Then, some of them are obviously only addressed to those people who have already committed to its idea. Maybe that is the reason why Schopenhauer flees particularly on this topic regularly into polemic statements and blunt attempts to win his readers by using blatant rhetorical figures. Even if maybe he failed to defend his worldview, this does not entail its incorrectness and does not negate its charm.

According to McDermid, there are all in all eight possible apologias for transcendental idealism found in Schopenhauer's works. (see McDermid, 2003, for exact reference) The logical quintessence of these claims is now presented and quoted from above mentioned. However, the upcoming *conclusion* or *problem* paragraphs are not literal passages and are adapted.

A: The Immediacy Argument

(A1) All that is known immediately is what is subjective; that is, the contents of my own mind or consciousness.

∴ (A2) Whatever I know outside my consciousness – including the external world – ‘is first mediated ... by consciousness’ [from A1].

(A3) Whatever is mediated by consciousness is dependent upon it.

∴ (A4) The world of perceptible objects must be mind-dependent [from A2, A3]

Problem Assuming (A1) and (A3) is true then A only shows that ‘one’s knowledge of the external world is dependent upon, one’s knowledge of the contents of one’s own consciousness’. But that alone, does not limit the existence of the objective world to the mental domain as Schopenhauer claims in (A4). Another kind of proof is necessary for this claim. Therefore we will attend to this issue later (cf. G and Ti1).

B: The Certainty Argument

(B1) Philosophy must start from what is absolute certainty.

(B2) Only the facts of consciousness are certain: ‘[E]verything of which [a subject] has certain, sure, and hence immediate knowledge lies within his consciousness.’

∴ (B3) Philosophy must start from the facts of consciousness [from B1, B2].

∴ (B4) Idealism is true: ‘[T]rue philosophy must at all costs be idealistic’ [from B3].

Problem Assuming (B1) and (B2) are true, (B4) does not follow from (B3), because even if one accepts (B3) it does not lead necessarily to an idealistic philosophy.

C: The Epistemic Access Argument

(C1) If epistemological realism were true, then knowledge of the external world would be knowledge of a realm of mind-independent objects.

(C2) ‘[A]ll we know lies within consciousness’.

∴ (C3) We can know only our representations, not mind-independent things [from C2].

∴ (C4) If epistemological realism is true, we lack empirical knowledge [from C1, C3].

(C5) We cannot acquiesce in such scepticism; for we can and do have knowledge of the external world.

∴ (C6) The epistemological realist must be mistaken about external objects being mind-independent [from C4, C5].

Problem Proof of (C2) is missing. If (C2) just means that we can only know about something that is at least possibly an object of our consciousness – a claim which would not be strong enough for Schopenhauer's taste – then (C3) does not follow necessarily.

D: The Conceivability Argument

(D1) We cannot imagine or conceive of an objective world existing without a mind or knowing subject.

∴ (D2) Realism is inconceivable [from D2].

McDermid finds three different ways on how to interpret claim (D1). Only the third one will be mentioned because it is the only one relevant for this matter.

Interpretation (D1) can be seen statement that every perception or imagination of a physical object depends on a certain perspective and other subjective factors. That is why they are perceived from a subjective point within the world and not from a view from wheresoever outside the mind. This interpretation imposes a *perspectival idealism*: reality is not independent from partial influence of subjectivity. In that concern Schopenhauer would go even further and conclude that the idea of an objective world without the subject is pointless.

Problem At this point the quite obvious problem is that Schopenhauer has to give an argument for this reduction and does so in G (cf. also Ti1).

E: The Representation Argument

(E1) Knowledge is 'essentially a making of representations'.

(E2) My representations are distinct from things in themselves.

∴ (E3) Our perceptual representations cannot yield knowledge of (...) things in themselves, that is, of how things are 'outside our knowledge' or without the mind [from E1 and E2].

Problem (E2) leads immediately to the objection by realistic positions. Representations could just fit the way they are onto the mind-independent reality. 'In other words, what prompts Schopenhauer to dismiss the familiar Lockean idea that our representations, though directly known, are epistemic intermediaries capable of revealing or disclosing a world lying beyond themselves?'. That is because Schopenhauer assumes the existence of a thing in itself apart from the mere surface of appearance, which is independent of the intellect's forms of space, time and causality. Since this is one of the most fundamental claims in Schopenhauer's transcendental realism it suggests itself to be discussed below in detail (cf. Ti2).

F: The Analogy Argument

(F1) The world I apprehend in my dreams is a function of my mind or intellect.

(F2) This dream-world is similar, at least in certain key phenomenological respects, to the world encountered in veridical perception.

∴ (F3) It is probable or likely that the external world is similarly fashioned by (and dependent on) the human mind [from F1, F2].

Problem Dreaming poses a real threat to non-representationalistic concepts of perceptions. Since the existence of dreams is factual and dream experiences find analogies in wake experiences, there needs to be a mental basis of perceptions independent of direct influence by non-mental things. Nevertheless this holds true for scepticism, representative realism and idealism, as well. By that, this argument does not exactly lead somewhere.

G: The Simplicity Argument

(G1) The realist's objective world of mind-independent objects is a superfluous duplicate of the epistemological idealist's subjective world of representations.

∴ (G2) Epistemological realism is not as good an explanation of our perceptual experience as epistemological idealism, which refuses to posit the existence of anything outside our representations [from G1].

∴ (G3) Idealism is more apt to be true than realism: it seems the world as representation is the only world we need invoke here [from G2].

Interpretation At this point Schopenhauer explains a true benefit of giving up the perception of mind-independent objects: parsimony. But McDermind's objection is correct that this reduction is maybe not sensible. After all, a world of non-mental, exterior, actual objects might be necessary for explanations. For example one could claim that non-representational objects are the underlying cause for representational objects. But in Schopenhauer's diction, it would be a misconception to see a causal connection between non-representations and representations, for causality only applies within the domain of the latter.

Problem (a) Evidence is needed for the claim that causality does not affect things independent to our representations (cf. Ti3) and (b) simplicity does not imply correctness of the argument. Why there still might be a chance of abandoning the idea of mind-independent objects shall be discussed later (cf. Ti1).

H, I: The Argument from Space, Time and Causality Schopenhauer assumes in those two arguments that a proof for idealism can be given by the subjective character of space, time and causality. What he did not seem to realize was the insufficiency of his demonstrations.

Problem A solid Proof is needed that space and time are actually a priori forms of the intellect and do not extend further to the realm of mind-independent things (cf. Ti3).

3.1.2 Strongest points of criticism

In all formally valid proofs Schopenhauer uses at least one of the following three implicit assumptions, which are all not sufficiently evident.

(Ti1) The objective can and should be reduced to the subjective.

(Ti2) Representations are distinct from the thing in itself.

(Ti3) Time, space and causality are actually only properties of our cognitive apparatus.

If it is possible to reasonably confirm the truth of only one of these three assumptions, it would also confirm the validity of the others:

If (Ti1): The truth of (Ti1) confirms (Ti2), if an ontological idealism is rejected, and (Ti3) when using Schopenhauer's conception of objects.

If (Ti2): If representations are distinct from the thing in itself, then objects can only be subjective, for they are not part of an objective outer world which consists of the thing in itself.

If (Ti3): The realm of objects is by definition determined by space, time and causality. If (Ti3) is true, then (Ti1) is true, since the outer world cannot be described by objects. Therefore (Ti2) is true, insofar that objects are only existing within the mind. Thus, mind-independent things are not objects. The thing in itself, for being mind-independent, cannot be an object and is therefore distinct from any representation.

In the following there shall be some arguments presented to increase the plausibility of assumptions (Ti1-3) and to make them not just stand there as unquestioned convictions.

3.1.2.1 The objective world

An up until now unresolved problem in Schopenhauer's idealism is the claim that anything objective was not part of a subject-independent world. He therefore demands a complete reduction of the objects on to the subjective. This might lead to the misconception that Schopenhauer thinks of an *objective idealism*. He never denies there is something real in an ontological sense. In his philosophy it is the thing in itself, the Will, which is experienced but not objectively known.

Hence he goes even further than merely taking a sceptical position towards all perception. He implies that there is something beyond objective knowledge. By that he criticizes the consideration of a universal validity of what is called objects or objective world. This objective world lies not within an empirical outer world, but within what is purely subjective. Objects do not exist independently but come about by apprehension. This proceeding adds their qualities and phenomenological properties such as color, texture and others. This means that the way they come into being, makes them what they are. By reducing all of there properties, the object would cease to exist, for it loses all its qualities and thus would be indistinguishable from anything else.

However, its essence cannot be eliminated, because it is not accessible for us. It is the foundation for the object's existence but as such not directly known. This essence is also not just raw matter, since *matter* is a subjective representation as well. It is what all ostensive representations are referring to: the effect on us. As already discussed, the

object emerges by sensory data (sensed actuality) being processed by the forms of our intellect (space, time and causality) into the shape of a real object. Before that, it was only a change or fluctuation of actuality. This change was distinct from the object's properties.

Seen like this, Schopenhauer does not contradict what can be said by contemporary theories. White (1999) suggests why this thinking could be compatible with methodological naturalism and physics:

Physicists begin by considering photographic plates, cloud chambers, Geiger counters, and so on, and conclude that what really exists is a world of fundamental particles without determinate position and momentum. In other words, reflection and argument lead them to conclude that real objects are not as they appear but are in large measure representational. Much the same is that case with Schopenhauer. Reflection and argument lead him to conclude that real objects are not as they appear, but are in toto representational. (White, 1999)

So it is not excluded that the world of objects comes into existence within the individual's mind by making distinctions and classifications. Those objects would base on and relate to the incoming sensory data. On the other hand they would be limited by the subject's cognitive abilities. This could explain the genesis of concrete objects, such as table or stone, out of a world of colorless and shapeless waves or elementary particles. Without this mental discrimination process it might remain, as Schopenhauer puts it, *bare acting* (*bloßes Wirken*).

Taking this for granted explains why any knowledge or explanation does not directly relate to actuality as such but only to a more or less suitable conception of it. This is the reason for the hypothetical truth of all empirical judgments and their failure to expand towards the thing in itself. At this point Schopenhauer sees the end of all science. The thing in itself can only be subjectively experienced and *known of*, albeit not really *known about* and not directly communicated. Those experiences could best, if it all, be expressed by the products of *true art* (*ächte Kunst*)¹.

3.1.2.2 The thing in itself

Schopenhauer needs to have a unified mind-independent foundation of all experience, a thing in itself, because of his rejection of a purely subjective idealism. This requires him

¹See Schopenhauer's third book in W1: *Der Welt als Vorstellung zweite Betrachtung: Die Vorstellung, unabhängig vom Satze vom Grunde: die Platonische Idee: das Objekt der Kunst*.

to show that the appearances, which are forming the world, are indeed distinct from the thing in itself.

The idealistic position has been enduringly criticized by epistemic realistic perspectives with arguments as simple as *when we see our hand, we might actually see our hand*. (Searle, 2006, pg. 281) Nowadays, especially in natural sciences, idealistic (or *constructivistic*) theories are sometimes even considered senseless ideas by a new kind of *amateur* or *fast food philosophy*². (Bischof, 1966, pg. 92) Flippantly speaking: If you want to impose having a refined mind, criticize reality by good old philosophical scepticism about the uncertainty of our knowledge.

In the following, a modern day realistic theory shall be introduced to contrast Schopenhauer's position. Since it seems one of the most influential opponents of idealism, the main concepts of *evolutionary epistemology (EE)* will be presented shortly.

For the commitment to a *hypothetical realism* EE assumes:

- (a) There is no secure and final knowledge.
- (b) All synthetic judgments can only be hypothetical and require ongoing and critical questioning.
- (c) This feedback process of hypothesis and examination will finally lead to a better matching or an increase of similarity of theory and reality.

(see Irrgang, 1993, 2001, and references there)

Schopenhauer would maybe submit to this program, but could point out that this doctrine can only handle the empirical reality. This method deals with the superficial actuality and not its essence, the thing in itself. Its knowledge and explanatory power is restricted by the nature of our subjective cognitive apparatus.

EE understands those a priori given factors of knowledge not as simply transcendental, but in the context of ontogenetic adaptation processes and their role to benefit the maintenance of a species. (Lorenz, 1941, pg. 100) For humans we can therefore assume that their cognitive structures *fit* to the appearances of nature to a certain degree. The aptitude of the mental apparatus has been relevant for survival. Drastically but elegantly spoken:

²It is interesting – maybe even amusing – to note that Schopenhauer considered *realism* as *barber companions' and pharmacist trainees' philosophy*. (W2, §17)

The monkey that had no realistic perception of the branch he was jumping for was soon a dead monkey – and did not belong to our ancestors. (Simpson, 1963)

This perspective can yield an explanation, why all mental objects are in a certain, harmonic relationship to each other, which had also been noticed by Schopenhauer. He concluded that objects thus have to be solely intellectual. What else could explain their coherence? Schopenhauer has not honestly considered the idea of an evolutionary adaptation process of mental capabilities. Evolution theory was at his time in the fledging stages and bore obvious problems and inconsistencies (see 3.4).³ Nevertheless it would have been interesting, how evolution theory could have changed his epistemology.

But Schopenhauer never denied that the way we perceive the world we live in *fits* and allows us to live ordinary lives:

[Die Mittel des Verstands sind] also völlig genügend für das praktische Leben; aber er reicht keineswegs hin, uns Aufschluß zu geben über das Daseyn und Wesen an sich der auf solche Weise für uns entstehenden Erscheinungen, oder vielmehr ihres intelligibeln Substrats. Daß also auf Anlaß gewisser, in meinen Sinnesorganen eintretender Empfindungen, in meinem Kopfe eine ANSCHAUUNG von räumlich ausgedehnten, zeitlich beharrenden, und ursächlich wirkenden Dingen entsteht, berechtigt mich durchaus nicht zu der Annahme, daß auch an sich selbst, d.h. unabhängig von meinem Kopfe und außer demselben dergleichen Dinge mit solchen ihnen schlechthin angehörigen Eigenschaften existiren. – Dies ist das richtige Ergebniß der KANTISCHEN Philosophie. (W2, §1)

So his critique is setting in when considering the borders and constraints of knowing. Our knowledge cannot overcome the limitations given by the forms of ostensive apprehension and its reflexion. In other words: the limits of our sensory perception, which is perception of the *mesocosmos*, and judgments based on these objects are limiting our knowledge.

In this concern Vollmer (1985, 2007) opposes that theoretical knowledge can correct this mesocosmic knowledge. By that he means that reasoning⁴ can correct apperception. (Vollmer, 1985, 2007, pg. 207) Schopenhauer contradicts this opinion. Reflexion can

³Charles Darwin's (1809 - 1882, English biologist.) book *On the Origin of Species by Means of Natural Selection, or The Preservation of Favoured Races in the Struggle for Life* which can be seen as the kick-off for popularization of evolutionary thinking was released in 1859 – less than one year before Schopenhauer's death.

⁴Vollmer actually uses the word *Verstand* (*apprehension*) for he is referring to Kant's nomenclature. That is why this term has been modify to comply with Schopenhauer's terminology.

help to cope with misperceptions and false illusions, but cannot eliminate it. (W1, §6) It regularly happens that abstract knowledge (e.g. the earth is moving along an approximately elliptical trajectory around the sun, which is stable in our solar system) is contradicting the intuitive perception of an observer (e.g. on earth we see the *sun* moving around an idle earth). However, this form of knowledge does not alter what is perceived – it can only affect higher levels of interpretation.

For EE and hypothetical realism the non-subjective world, the thing in itself, is perceivable and even partly hypothetically known. This is the fundamental distinction between EE and transcendental idealism. According to EE, the hypothesis that we need to assume the existence of a thing independent of our perception is based on a false assumption:

Aus der Tatsache, dass jede faktische Erkenntnis mit mesokosmischen Mitteln *getestet* wird, schließen sie irrtümlicherweise, dass sie auch auf den Mesokosmos *beschränkt* sei. (Vollmer, 1985, 2007, pg. 210)

If it was true that we can only know things from the mesocosmos, all knowledge and all science of non-ostensive things, which are usually in-perceivable, would come to an end: e.g. atoms, particles or phenomena in cosmology. How could it be explained that nevertheless testable and coherent theories about them are possible?

Certain technologies enable us to quasi drag those things outside the scope of perception into the experienceable domain of mesocosmos, which we are adapted to and comfortable with. This allows a theoretical knowledge of those parts of being that are far away from any ostensive perception.

The question is now, whether this disproves the existence of the thing in itself. Technical aids can be seen as artificial extensions of our senses; computers empowering our own calculation powers and storage capacities; and machines give greater strength to our arms and hands. They give us the opportunity to delve deeply into regions that are far beyond natural and intuitive comprehension. On the other hand, it is not possible to fully overcome human subjectivity, given by the way we think. The collected datasets become information not until processed by the human mind. Before that they are meaningless junks of data.

What we thus could see as a limiting factor are the intrinsic constraints of human mental capabilities: there cannot be any thought of unthinkable things. Put into evolutionary terms, we could say that we cannot think of any thing our mental apparatus never has been adapted to. This is especially true, if this thing always has been and maybe

always will be outside of that portion of reality relevant for our survival. By that we need to consider all knowledge being at most hypothetically true, which is exactly what Schopenhauer considers *transcendentally ideal*. When we ascribe wave-like and particle-like properties to light, we create a representation or conception by our means of human understanding of something that is by itself completely indescribable. We can only judge the seen phenomenon by its behavior and not by its essence. If the true nature could be known, then absolute knowledge would be feasible. However, both Schopenhauer and hypothetical realism deny this possibility. This is what the concept of thing in itself alludes to. Its existence is therefore not at all implausible if we accept EE.

Just as we come to believe that subjective experience is not sufficient for the acquisition of reliable knowledge and we therefore justly rely on the inter-subjective methods of science, it should also be obvious that there are and will be certain limits for empirical knowledge.⁵ Regarding this, there might be speculations and ideas about complete new forms of perception or a 'view from nowhere' but this will not be addressed within this thesis.

Summed up this whole idea means that science and epistemology can deliver judgment about the appearances, which are absolutely real and factual. The limits of empirical knowledge can be insofar extended, as more phenomena of actuality get unveiled. They can be used to form new relationships and to predict further phenomena. A theory can fit to the world of appearances and can be object to ongoing scrutiny – but there is no final proof for it. This is due to the fact that the essence of actuality cannot be understood. Thus any knowledge is only hypothetically real or transcendental ideal in relation to an existing, real actuality, which is determined by intrinsic processes not accessible due to a prior given structure of the forms of knowledge.

These aprioris might seem transcendently ideal for a subject, but can be explained by their evolutionary genesis. However there is no final reason, why those genetic processes have been evolving this very way, for there is no final reason why the universe happened to be this very way.

3.1.2.3 Space, time and causality

Finally we need to discuss if space, time and causality are (a) actually a priori given forms of our thinking, and (b) whether these forms are confined to the domain of our thoughts or apply to what is actually there.

⁵I cannot resist to mention in this concern the simple but elegant tagline by Hans-Peter Dürr (born 1929, German quantum physicist) which he has been using repeatedly in his numerous lectures and talks: 'Wir erleben mehr, als wir begreifen.' ('We experience more, than we can grasp.')

Epistemic view. The capability to perceive space, time and causality is developed in human infants within the first year. (Parker and McKinney, 1999, pg. 26) Today it is assumed that spatial vision by reconstructing a two-dimensional retina image, time sensation and possibly causal thinking are innate thought patterns. (Vollmer, 1985, 2007, pg. 18) Schopenhauer's epistemic aprioris are thus not factually confuted. Nowadays we can even talk about their formation. While in Schopenhauer the Will necessarily defined those aprioris, evolutionary epistemology assumes their coming about by ontogenetic selection processes. However this shift in paradigm does not affect the apriori aspect for the individual.

Wenn das [note: the existence of those aprioris] wahr wäre, dann müsste jede faktische wissenschaftliche Theorie mit Kants [note: or Schopenhauer's] apriorischen Prinzipien übereinstimmen. Auch die moderne Wissenschaft müsste diese Prinzipien unvermeidlich enthalten und bestätigen. Keine empirisch bewährte Theorie dürfte ihr widersprechen. (Vollmer, 1985, 2007, pg. 210)

This is exactly the case. For objective, scientific knowledge space, time and causality – the way Schopenhauer defined them – are necessary prerequisites. For affirmation from the natural sciences, he refers to a physics textbook by Poillet⁶ that confirms the infinity of space and its independent existence from matter, and that the time dimension is independent from changes within its domain. (WN)

Ontological view. Validity of the concepts space, time and causality do not apply to mind-independent things for Schopenhauer. It is therefore not acceptable to think of the thing in itself in such terms. EE adopts the first part of his criticism:

Zunächst einmal entstand dieser [Wahrnehmungs-]Apparat als ein Werkzeug für das Überleben. Er wurde nur für eine spezielle Umgebung getestet und ausgelesen, die wir 'Mesokosmos' nennen [...]. Es gibt keinen apriorischen Grund warum er für mehr taugen müsste. (Vollmer, 1985, 2007, pg. 73)

The mesocosmos is that section of the world, which is consciously experienced in everyday life: all medium distances, the visible electromagnetic spectrum, etc. It is therefore congruent to the domain of Schopenhauer's concrete objects. From there he concludes that just because our perception suits the needs of our lives we must not infer its universal appropriateness and that it could apply even for the thing in itself. This is, then, contradicted by EE:

⁶Claude Servais Mathias Pouillet, 1791-1868, French physician.

Aber tatsächlich taugt [der Erkenntnisapparat] für mehr. Unser Gehirn befähigt uns, Hypothesen und Theorien zu bilden, die den Mesokosmos bei weitem überschreiten, mit dem es einig werden musste. (Vollmer, 1985, 2007, pg. 73)

It is generally assumed in natural sciences that space and time are ontological facts.

Dass die Welt 'wirklich' drei räumliche Dimensionen hat, wird durch alle relevanten Theorien der modernen Physik bestätigt! Es gibt nicht den leisesten Hinweis auf eine abweichende Dimensionalität, keinen Widerspruch, auch keinen besseren Erfolg eines vier- oder n-dimensionalen Rivalen (obwohl solche mehrmals vorgeschlagen und ausprobiert wurden). [...] Dreidimensionaler Raum und eindimensionale Zeit bleiben wohlunterschieden (wenn auch nicht unabhängig voneinander oder absolut wie in der klassischen Physik). (Vollmer, 1985, 2007, pg. 62)

Schopenhauer would not reject this argument. Quite the contrary is true. This distinctive structure is exactly what comes about by our forms of apprehension. Therefore, any physical theory like this is only relating to the world of appearances and not to their foundation. A worldview without space, time and causality is unthinkable for us. Without these aprioris, no theory based on empirical findings could exist.

This question is actually leading nowhere out of a vicious circle. At the end of this section it might be added that there are discussions on the fringes of contemporary theoretical physics about the non-existence of time, as we know it. (Barbour, 2000)

3.1.3 Conclusion

In this chapter it has been shown that Schopenhauer's concept of a transcendental idealism is not simply off the table. Logically seen, it is still a valid theory, although Schopenhauer's apologetics are not well designed; neither argumentatively, nor formally. His theory does not contradict to empirical findings known by natural sciences and is even somehow compatible with evolutionary epistemology, if its inherent hypothetical realism refers to actuality and not to the thing in itself.

The consequence would be an ontologically founded scepticism towards a full description of the world, or a *theory of everything*, by scientific and rational methods. The 'job' of our mental capabilities is not the finding of truth but to be an apt tool for the Will. On the other hand EE states that those thought patterns relevant for survival have been

positively tested by evolutionary processes and passed on to further generations to a higher extent. Factors irrelevant for survival or reproduction can be seen as neutral in terms of evolutionary selection. One can see a certain analogy between Schopenhauer's claims and the insights from evolution. Is there maybe a naturalization of the Will concept? (see section 3.4)

There might be some critical remarks, when one tries to understand *why* Schopenhauer had to build this eccentric theoretical complex. At his time it was not satisfyingly explicable (a) where the a priori given forms of perception and cognition come from, (b) why they somehow match empirical reality, and (c) why there is such a variety of natural phenomena, plants, animals and human beings with so many distinctive characters.

Schopenhauer intended to disprove the obvious scepticism that the world was just a construction by phantasy. In this paradigm it is easy to explain that the world is consistent, plausible, and tuned to itself, because it would be the pure fiction of a mind following exactly the same logic. That is why he insists on the existence of the mind-independent thing in itself.

Then he wants to state by his relativistic account that he considers final knowledge as impossible. Even if perception was perfect, there could not possibly be objective knowledge of the thing in itself. His limitation therefore indicates a general boundedness of rational knowledge, or in other words, the irrational nature of existence.

Finally he rejects a pre-stabulated harmony of the world, set by the will of a creative god as thought by Leibnitz⁷. (WN, pg. 181) Schopenhauer's metaphysical concept does not require the involvement of a god or a creator – it even makes any theological idea obsolete. So it was necessary to define a force that brought to world into its shape. This is done by the introduction of a transcendental Will in itself. This Will can be used as an ultimate reference for any appearance in nature and everything living. Given that, he could explain the well-adjustment of the Will's distinct objectivations: why the fin of a fish fits to the characteristics of the water, why there is food available for us and finally why an individual is confined from the outer world and there is a Will for Life.

In today's view of the world, shaped by scientific and rational enlightenment, explanations are aspired that do not require the creation of the world by a supernatural being or its constant interference. As Schopenhauer already remarks, science cannot possibly give an ontological proof for the non-existence of god, neither. The theory is nevertheless widely rejected as implausible. This form of scepticism is explained precisely by Russell (1952)⁸:

⁷Gottfried Wilhelm Leibniz, 1646 - 1716, German mathematician and philosopher.

⁸Bertrand Arthur William Russell, 1872 - 1970, British philosopher and mathematician.

If I were to suggest that between the Earth and Mars there is a china teapot revolving about the sun in an elliptical orbit, nobody would be able to disprove my assertion provided I were careful to add that the teapot is too small to be revealed even by our most powerful telescopes. But if I were to go on to say that, since my assertion cannot be disproved, it is an intolerable presumption on the part of human reason to doubt it, I should rightly be thought to be talking nonsense. (Russell, 1952)

So Schopenhauer wanted to create a view of the world that was sufficient without any religious speculations or implications and nevertheless explained why the world is so coherent. Nowadays we have the concept of evolutionary processes, which in contrast to Schopenhauer's static stability involve a dynamical way of thinking about the world. This topic will be addressed in section 3.4.

3.2 Schopenhauer's theory of mind in the light of modern science

An essential criterion of a modern theory of mind is its compatibility and plausibility along with neurobiological and evolutionary biological findings and theories. It is expected that this theory would not contradict existing and successfully tested positions without an adequate reason. In the disciplines of cognitive science some paradigms are assumed to be reliable and quite assured. For example, it is clearly obvious that no theory of mind could be established, which is supposing the spleen being the biological substrate of human thinking. This would contradict unambiguous empirical observations that have shown that a functioning brain is necessary for anything mental.

This chapter will now take up the question how far Schopenhauer's theory of mind measures up to this requirement. It has to be noted that not all philosophical theories of mind have to fulfill the demands of neurobiological plausibility. First of all, a theory of mind needs to be logically valid. A dualistic concept could be formally sound without any scientific plausibility, when treating the mind as a phenomenon, which is totally distinct from the brain and everything else from the material world. But as soon as the mind is considered as a product, function or property of the brain the theory also has to be compatible with empirical results to a certain degree. Schopenhauer himself supports his theory of mind with findings about the brain from medicine and biology. He commits to scientific methodology, as well. His statements about the mind are sometimes also statements about the brain and its functioning. Those claims have to be not only logically valid, but also empirically plausible. Obviously, there cannot be this sort of examination of the subjective and transcendental components of his philosophy, for they are beyond any scientific concept. This was known to Schopenhauer and led to his appraisal of the arts for this kind of knowledge.

The mind, the subjective, perception and cognition are brain phenomena, according to Schopenhauer. The brain is considered by all means mysterious and highly complex. It is what brings reality into being. Some functions of the brain, according to his account, have been described in section 1. In the following the already said shall be extended by insights from the current state of science.

3.2.1 The neurobiology of sensation

The following section is based, where not stated otherwise, on the bestselling neuroscience textbook by Bear, Paradiso, and Connors, 2006.

The main building blocks of the nervous system are single *neurons*, which establish connections amongst each other. There are various types of nerve cells, which can be distinguished by their anatomy, physiology and sphere of influence. Their essential role is to receive signals, process them and pass them on in a suitable way. This transduction is done in the form of a bioelectrical process by concentration changes of charged ions inside the cell and its environment. If a certain threshold of activation is exceeded, which means that the input signal has been 'strong enough', the cell would fire a so called *action potential*, which is transported along the cell membrane. Via extensions of the neurons (*axons* and *dendrites*) those potentials can bridge long distances (e.g. link different brain areas or send data about stimulations of the sole of the foot to the spinal cord and the brain). Axons can be up to one meter in length and branching. Nerve cells can communicate with their surroundings by bio-electrical signals, by the release of neurotransmitters in junctions (*synapses*), and by the secretions of hormones into the body. About 100 billion of those cells reside within the brain.

According to their physiological function we distinguish between:

Sensory or afferent neurons provide sensory data from receptors in sensory or inner organs.

Motor or efferent neurons propagate signals from the brain or the spinal cord to muscle fibers or hormonal glands.

Inter neurons are most common in humans and create connections between other neurons. They do not just link them together but also take part in a large system of signal processing.

The neurons gain their functional properties by the fact that they selectively transmit signals in an all-or-nothing fashion.⁹ Not until a certain cell specific activation threshold is exceeded, an action potential is started, which can be handed over to another cell or modulate its cellular metabolism.

Within a piece of tissue of the cerebral cortex as small as about 1 mm³ the existence of many 100 millions of synapses can be shown. Those connection are constantly rebuilding and changing, which is called *synaptic plasticity*. It is therefore assumed the formation of new links and the deceasing of unused contacts can be the foundation of cellular learning. It seems to be true that cells with regular common activity will increase their

⁹However, there are other, more complicated ways of communication on cellular level which are highly important for the proper function of the brain and its abilities to adapt and change itself. Those processes cannot be explained in short and have to be studied using appropriate literature.

connectivity. On the other hand, connections will be deconstructed when not in use. Very simply explained: *What fires together, wires together.* or *Use it, or lose it.*

Those connections can have excitatory or inhibitory effects on the post-synaptic cell. For example: If the excitation of an inhibitory neuron is strong enough to start an action potential it can prevent the firing of a downstream neuron, which under normal circumstances might have been activated by another excitatory neuron. Those mechanisms make complex circuits (e.g. pattern processing), oscillators (e.g. biological rhythms such as day/night) and regulatory loops (e.g. temperature regulation) possible. How important the right amount of excitation and inhibition on cellular level must be is shockingly revealed by certain neuro-pathological conditions. A too large amount of excitation, which causes a synchronous firing of various, widely-distributed nerve cells and assemblies, could lead to the symptoms of *epilepsy* with a range of senso-motoric deficiencies, some forms of hallucination, unwilling movements and loss of conscious. On the other hand, excessive activity in inhibitory neurons will lead to stupor and coma. Even on a larger scale the appropriate balance in activation of antagonistic brain regions are important for mental health. *Tourette's syndrome* or *anxiety and compulsory disorder (OCD)* are only two diseases related to this form of misbalanced connectivity.

Systematically, the nervous system consists of the central nervous system (brain and spinal cord), and the peripheral nervous system (outside the CNS, innervating the body). The human brain can be roughly separated in those parts:

Cerebrum is the biggest in volume and plays an important role in various cognitive functions. It is split longitudinally into two hemispheres which are interconnected in the center by a bundle of nerve fibers called *corpus callosum*. The cells' nuclei of cerebral neurons lie within the few millimeter thick and deeply grooved *cortex*. Anatomically it can be noticed by its grey color, while the center is white. This is where only the axons of the nerve cells are situated to connect different brain areas. Within each hemisphere, deep below the cortex resides a kernel region called *basal ganglia*. They are related to executive function, willfulness, motivation, and planning.

Cerebellum lies in the lower rear section (dorsal and caudal) and is involved in motion coordination processes, maintenance of body posture and certain forms of emotional memory.

Diencephalon is below (caudal) cerebrum. It consists mainly of two parts: *Thalamus* is the central terminal and processing location for sensory data and takes part in attention modulation processes. *Hypothalamus* is a structure dealing with

the regulation of body processes to ensure an optimal environment for metabolic reactions.

Brain stem is the bridge between the spinal cord and the brain. It contains *mesencephalon*, *pons* and *medulla oblongata*. They are ontogenetically the oldest parts of the brain and specialized to processes that have to be fail-safe: regulation of sleep phases, production of neurotransmitter, eye movement, circulation, respiration and some reflexes.

The following sections shall be able to give a small overview of the neurobiology of sensation. The knowledge about different functional classifications of brain areas is due to experiments using imaging systems (fMRT, SPECT, PET) or other test methods (EEG, trans-cranial magnetic stimulation) in living humans and animals. Then, one can also observe the effects of lesions. If a particular area of the human brain is affected by some sort of damage (e.g. by brain tumor, head trauma or stroke) certain neurological impairments can be diagnosed. For instance, a deficit of Broca's¹⁰ area¹¹ leads to obvious impairments in language and speech.

Successful theories and models have shown that certain brain regions are correlated with certain mental phenomena. From there apt knowledge and understanding of functions in various brain areas could have been developed. In this concern we often speak of neural correlates, circuitries or centers of a specific mental process.

3.2.1.1 Seeing

Schopenhauer already knows that seeing is initiated by visible light causing activation within the retina. (W2, §3) Light quanta can pass through the *cornea*. By optical processes in the *lens* the light is projected as an up-side-down flipped image of the visual scene through the gelatinous *vitreous body* onto the *retina* in the rear section of the eye. There it causes a chemical reaction of photo pigments embedded in the photoreceptors of the retina. In humans there are two kinds of those light-sensitive proteins. *Rhodopsin* is located only within exclusively light-dark-sensitive receptors, named *rods* for their prolate shape. The color-sensitive *cone* cells are equipped with one of three slightly distinct formed *iodopsin* proteins, having the highest sensitivity either for blue ($\lambda = 430nm$), green ($\lambda = 500nm$), or red ($\lambda = 560nm$) light. The light intensity needs to be higher for the sensation and discrimination of colors. When a photon hits one of those receptors it leads to a change in the structural shape (*isomerization*) of the opsin, which is called *bleaching*. By further metabolic processes the cell will release more

¹⁰Paul Broca, 1824-1880, French physician.

¹¹Named after its discoverer Paul Broca.

(little light) or less (much light) of the neurotransmitter *glutamate* to down-stream nerve cells. The incoming light is thus dependent on its wavelength and intensity translated into bioelectrical signals.

The photoreceptors are not evenly distributed along the retina in density or type. As a consequence there is a location of best color vision, the *fovea*, while other regions are mainly good for light-dark distinction. The region in the visual field in which a sharp and colored picture can form is therefore only as big as the palm of the hand of one's stretched arm (different kinds of ametropia not considered). To get nevertheless a continuous image of the visual scene slight un-noticed eye movements (*saccades*) are necessary. On the other hand a complex reconstruction based on stored information from the past is required, which takes place in that part of the cerebral cortex responsible for vision (*visual cortex*). Then it needs to be guaranteed that relevant changes in the environment lying outside the current visual focus can be sensed. This shift in eye orientation is triggered by a structure known as *superior colliculus* in mesencephalon.

Through various wirings and processing in further layers of the retina, with the goal to increase signal quality and contrast, the abducting nerves are bundled to form the *nervus opticus* to connect with the brain. Both nervous pathways meet near the *hypothalamus* where nerve fibers with signals from the left visual field are projecting to the right cerebral hemisphere and the other way around (*optic chiasma*). From this junction neurons also connect to the hypothalamus, related to biological rhythms, the mesencephalon, for adaption of the pupils' size on the current lighting situation and the already mentioned change of eye direction, and via *thalamus* to regions of cerebral cortex responsible for conscious visual perception. Besides that, there are numerous smaller connections that cannot be discussed within this simplified model.

3.2.1.2 Hearing

In Schopenhauer's ranking of the senses hearing is on second position. He concluded that sensation of sound waves must be a mechanical vibration of the auditory nerve, which eventually propagates into the brain. Therefore the mind is especially sensitive to moods transported by music, and the progression of thoughts are so easily disturbed by noise.¹² (W2, §3)

In fact sound does not directly propagate into any whatsoever center of reasoning within the brain. More than that, those acoustic waves inflict a vibration in the eardrum which

¹²Schopenhauer would even go this far to claim noise sensitivity and intelligence are reversed proportionally correlated. After all, he argues, Kant, Goethe and he himself were easily disturbed by loud noises.

causes further vibrations in another membrane (*basilar membrane*) inside the inner ear. On this membrane within the snail-shell-like twisted *cochlea* tiny hair cells reside which will change their orientation and bend along with the initiated moving. Depending on the strength of the convolution ion channels open to activate down-stream nerve cells. Due to the properties of sound and the adapted layout of the cochlea different frequencies will affect different locations there: low tones activate receptors in the direction of the eardrum, while only high frequencies can reach into the last windings of the cochlea.

Via the *audiovestibular nerve* the generated activation pattern is transported into the brainstem. In this region pre-processing takes place to determine spatial location. its projections lead to the *auditory cortex*. From there further pathways lead to the *Wernicke's area*¹³, which is essential for the understanding of language. Wernicke's area and the center of language synthesis *Broca's area*¹⁴ are located on dominant brain hemisphere (in right-handed persons usually left, in left-handed persons usually right). (Bear et al., 2006) The isomorphic region on the opposite side is believed to be related to the perception of gestalt¹⁵, melody and music. (Joseph, 1988)

3.2.1.3 Sensing

The *somatic sensory system* provides the brain with information about body states and external influences. Various receptors can sense the following stimulations:

- Pressure, touch and vibrations are mediated by *mechano receptors*. Their activity is increasing when a special kind of pressure is applied on the neuron's membrane.
- Pain is sensed by free nerve endings which are also sensitive for any bending or stretching of their membrane. A variety of substances (e.g. metabolic by-products, or chemicals released by immune reactions) can directly bind on those *nociceptors* to elicit pain sensation.
- Temperature is sensed by various receptors, which neural pathways are coupled to pain pathways.

Via the spinal cord signals from the body propagate to the brain. However, the medulla is not to be seen as a simple connection wire. It is responsible for pre-processing and reacts autonomously to certain stimuli (e.g. pain) in form of reflexes or automatic movement patterns.

¹³Carl Wernicke, 1848 - 1905, German psychiatrist and discoverer of the cortical area of the same name.

¹⁴Paul Broca, 1824 - 1880, French anatomist and discoverer of the cortical area of the same name.

¹⁵*gestalt*: the wholeness of the entire form or shape.

The organization of the *motor cortex*, a brain region dealing with processing and analysis, is by itself based on a somatic map, where e.g. palms, fingers and other delicate parts of the body would use larger areas.

3.2.1.4 Taste and smell

Taste and smell are considered chemical senses for their receptors are sensitive to chemical substances. *Gustatory receptor cells* on the tongue and pharynx have a similar function as nerve cells and can be distinguished by their sensitivity to saltiness (Na^+ -ions), sourness (H^+ -ions), bitterness, sweetness and umami ¹⁶ (all three: glutatmates). There are in toto about 30 different receptors for bitterness, because bitter taste is most likely found in substances poisonous for the body. To discover those in potential food can be sometimes the key to survival. Via three distinct brain nerves (*nervus facialis*, *nervus glossopharyngeal*, and *nervus vagus*) the signals are transmitted over the brainstem to hypothalamus and thalamus. Brainstem initiates autonomous processes such as swallowing and salivation. Hypothalamus is related to feeding motivation, and thalamus projects to the cortex, associated with conscious taste experience.

To activate *olfactory receptors* odorants need to float into the nose and dissolve in the mucus there. In liquid form they then can bind to one of approximately 1,000 specialized receptor types. By various combinations of activation humans are able to distinguish amongst 10,000 tastes. Nerve connections lead from the olfactory receptors via one of the two *olfactory bulbs* to the olfactory cortex and the thalamus, and from there to the orbitofrontal cortex. As with taste, smell is significantly important to detect potential danger for the individual (e.g. smoke) or the quality of nutrition (e.g. protection from rotten food). (Bear et al., 2006) Its role in selection process of sexual or relationship partner is not to be underestimated. (Eibl-Eibesfeldt, 2004)

For Schopenhauer smell had minor importance for the World of Representation. (W2, §3) However the sensation of odor is also represented within a sensory integration process with the other senses. (Small, 2004) Schopenhauer's relating of olfactory sense to memory is neurologically plausible and state of discussion. There is evidence for strong connections between the olfactory system and *amygdala*, which is seen as part of the (emotional) memory system. (Zald and Pardo, 1997)

¹⁶umami (Japanese): describes something like delicious or hearty. Can be ascribed to the taste of soy sauce, cheese, etc.

3.2.1.5 Homeostasis

Physiology understands *homeostasis*¹⁷ as the well-balanced functioning of biological processes and the maintenance of an interior milieu that enables those processes. Therefore it is needed e.g. to provide synthesis starting products (e.g. by nutrition) and keeping body temperature constantly at a level of 37°C . This form of self-organization can be found even on cellular level, where it is tried to establish certain ionic concentrations or obtaining nutrition.

A leading role in the self-regulation is played by *hypothalamus* and the *autonomous nerve system*. Hypothalamus influences those regulatory circuitries: temperature, cardiovascular functions, nutrition and fluid needs, circadian rhythms and sex drive. This occurs inter alia by secreting hormones into the bloodstream. The most known and at the moment mostly researched control loop is the *hypothalamic pituitary adrenal axis* (*HPA axis*), which is related to stress reactions. The release of the *corticotropin releasing hormone* by hypothalamus causes the elicitation of the adrenocorticotrophic hormone by the pituitary into the bloodstream. As soon as the hormone reaches the *adrenal gland* sitting on top of the kidneys the release of the hormone *cortisol* into the general circulation is triggered. Cortisol is affecting wide parts of the body causing a higher level of overall arousal, increased heartbeat, constricted blood vessels, higher release and production of glucose in the liver cells, and increased muscle tone. It also effects the *hippocampus*, a brain structure in the deep structures of cerebrum's temporal lobe, which is often associated with learning and memory. In this context *glucocorticoid* receptors in the hippocampus are held responsible to down-regulate the release of *corticotropin releasing hormone* by the hypothalamus. By this we have a prototypical self-regulating circuit. A malfunction in this feedback loops, which could be caused by adaptation processes to long-time stress, is associated with a variety of mental diseases: e.g. *obsessive-compulsive disorders* (*OCD*) and affective disorders, such as *major depression* or *bi-polar disorder*.

The *autonomous nervous system* is a neural network spreading over wide areas of the body and participating in a variety of body functions. It can be divided into the *sympathetic division*, which gets activated in crisis situations, and the *parasympathetic division*, associated with calmness and peace. As seen easily, those systems add up antagonistically to adjust the body and its status on the current situation adequately, if the system is not disturbed.

¹⁷Maturana and Varela, 1991, 1987, 1984 and their fellows prefer the term *homeodynamics* over homeostasis. For organisms are open in thermodynamically sense and show a high fluctuation in inner states of self-regulation, they can only be properly understood by their *dynamics*. A concept of stasis in the sense of unchanging is therefore misleading. However, the term homeostasis is used in the cited literature of this section. This is the only cause why the more adequate term has not been adopted.

3.2.2 The neurobiology of perception

In the last section it has been presented how we basically assume that states of the body and its environment are transferred into bioelectrical signals. To support the very argumentation of this thesis the level of detail has been sufficient, although only the most fundamental properties and functions could be discussed.

In the next step it needs to be made clear in what way these signals are processed. Schopenhauer's idea about the brain was that it integrates sensory data by its function of apprehension, which eventually builds a relationship between these signals and their possible cause. This brings up the link between subjective representation of objects and actuality. His hypotheses are therefore:

Sensing is just the first step in a hierarchically organized perception process of understanding. The cognitive neuroscientist Koch (2005) describes the cerebral cortex as hierarchically assembled. It can be distinguished between ascending (*feed-forward*) and descending (*feedback*) signal pathways connecting differing organization levels of the brain. (Koch, 2005, pg. 130) This hierarchy metaphor must not be interpreted in a way to assume a *homunculus* inside the brain, which eventually oversees anything and is responsible for the final decisions. (Koch, 2005, pg. 132) There is also not something like a *cartesian theater* in which consciousness would sit and watch the world passing by. (Dennett and Akins, 2008) This static model is now being replaced by the idea that these different organization centers and collectively firing neural ensembles are interrelating among each other by activation and inhibition. Therefore we cannot speak of one central location bearing total knowledge and power. Better metaphors for the activity of different neural coalitions could be the ongoing of *ademocratic election* (Christof Koch), a *phone conference amongst experts* (Henning Scheich), or different *coalitions getting famous and stand out* (Daniel Dennett). If a coalition prevails, its influence is usually only temporary for another coalition might get the upper hand when its activity is increasing. (Koch, 2005, pg. 27)

The reason for this hierarchical share of workload seems to be that higher regions use pre-processed signals from lower levels to search for special correlations there. (Koch, 2005, pg. 132) Considering the visual system for a moment, this theory can be explained quite practically. In the rear section of the head the cortex region V1 (*primary visual cortex*) is situated. It gets input from signals of the retina that were led through thalamus (exactly: *lateral geniculate nucleus*). In V1 there are distinct cell arrays sensitive to slightest edge orientation (*simple interblob cells*), motion direction (*complex interblob cells*), or color (*blob cells*). The activation of a cell (cell cluster likewise) depends if and

in what way the presented input data matches with its specific activation pattern. Thus a neuron can have its highest activatability when receiving the signal of an edge with a certain angle. Small changes in directions can lead to a decrease in fire rates or to its complete muting. It is assumed that a cortical module of $2 * 2mm$ in size is responsible for the encoding of form, motion and color of one point within the visual space. But a single point is not yet recognition. The area V1 projects neurons along a *dorsal pathway* ($V1 \rightarrow V2 \rightarrow MT \rightarrow MST$), responsible for motion detection and visual action control, and along a *ventral pathway* ($V1 \rightarrow V2 \rightarrow V4 \rightarrow IT$) for object recognition. Because those higher regions are provided with already pre-processed information they can focus their resources on their high-level specific task. (Bear et al., 2006, pg. 309-340)

Therefore it is theoretically assumed that the brain as a whole is divided into certain centers, which perform specific processing steps in a work-sharing manner. However it is shown, there cannot be a localization for any given mental phenomenon. Mostly it is thus only possible to speak of necessary centers or function. That means failure of a certain region would lead to a typical impairment. Some psychological properties, such as qualia, intentionality, volition or attention are seemingly only understandable on a systemic level.

So far Schopenhauer's assumption that sensory organs alone are not sufficient to create an image of the world is correct. In the brain a high amount of processing is required to create something meaningful. It is also true that those tasks are not performed by a linear succession of single neurons. The special kind of complex organization and sharing of workload within the brain is crucial.

This perception processes work automatically without conscious awareness and the necessity of reflection. That perception works in everyday life for most situations completely automatically and unconsciously is trivially clear. Only if for instance things are seen blurred and one has to consciously perform *compensation strategies* (like scrunch up one's eyes) or if the scene is so astonishing that one has to glance at it twice, the attention is distributed more likely on the process of perceiving itself. Besides those procedures that we can be aware of, the brain has a wide array of possibilities to provide a coherent image of the world.

The brain (and other organs) is built in a way to provide an adequate error resistance. Any system in which little variances in its environment or its components could impair its functioning is a weak link in the light of evolution. If a function is a key for survival and there are systems better adapted to the actual needs, those systems might be passed on to next generations more easily.

There are numerous means of error correction in perception and other neural processes. The ability of *filling in* is needed to add incomplete signals or to work out contradicting sensory data by filling this gap with the most plausible guess by activation of neural networks. Koch (2005, pg. 25) sees in this 'jumping to conclusions' a general principle essential for perception and behavior on cortical level. This principle, if actually existing in this form, would be a possible reason for the fallacy of *false illusion* or the *whensoever conclusion* found in Schopenhauer's analysis. (W1, §15) On the other hand it is so vital to guarantee the stability of a system within natural, inexact settings. Further mechanisms would be the completion of contours of a shape, or the interpolation of patterns. (Koch, 2005, pg. 60)

Why those procedures are normally not consciously attended must have something to do with their practical irrelevance for the living organism. For sufficient living, it would need no more than a coherent and fitting image of the world it is living in. Compensation and other routines can be plainly ignored by regions located higher in processing hierarchy, which obviously can reduce the consumption of valuable time and energy resources. Therefore it is safe to assume that perception systems primarily serve in their function for survival. Initially they were not built for obtaining knowledge of what is true or some form of critical reflection of the world. (Wuketits, 2007, pg. 108) And even closer to Schopenhauer's conception is the position by the German neuroscientist Roth (2003) saying that the individual world is entirely constructed.

Apprehension is achieved by mapping sensory input onto its most likely cause within a cognitive model. According to contemporary neuroscientific knowledge, we do not have reason to believe that memory or cognitive models are stored and organized like a database known from computing. It is commonly understood that memory and calculations in the brain are tightly interlinked with each other. This is why our brain has nothing to do with what we see in modern computers where data from a hard drive or other memory device is locally displaced from a processing unit. As previously discussed, neurons have special receptive fields, which are most sensitive to their adequate stimulus.

It could be concluded that neural coalitions with the highest activation upon a stimulus can be seen as apprehending something. Feeling cold water drops on one's skull feels just the same as if it was raining. So rain is most probably the cause for this sensation. If the weather circumstances would not allow such a conclusion or one is in a building or tunnel, another neural coalition would increase its activity and inform about a possible conflict, leaving the feeling that something might be wrong. It is assumed that this error

tracking system is implemented within the *anterior cingulate cortex* and other frontal regions responsible for smart reasoning and planning.

Reasoning is a reflection process within the human brain. As we see from anatomical and morphological studies the frontal regions of the brain is most abundant in primates, especially in humans. What is known from clinical cases of patients with brain lesions and scientific research is that this region is highly associated with: impulse control, social compliance, error detection, abstraction processes, reasoning and language. Taken alone, all those abilities are not sufficient to draw a line between the intellectual capabilities of humans and those of other animals. But taken together, a mutual potentiating of those different features could arise. (Roth, 2005, pg. 128) Those abilities are by some even considered being the product of a surplus organ, providing far more abilities than originally needed and useful for its bearer. (Oeser, 2006, pg. 95)

There is no hint that reasoning could be a transcendental phenomenon independent of other processes going on in the brain. This is coherent with Schopenhauer's diction that reasoning must not be seen as true view from nowhere. It can only remain within the structural limits of body and brain, which is the basis for all abstract reasoning. Even more, Schopenhauer stated that reasoning does not produce anything self-contained new and can only give explicit insights into already implicitly known.

3.2.3 Conclusion

So far, the basic concepts of Schopenhauer's theory of mind are correct to our understanding. However, it has not yet clearly been answered where his distinction between *apprehension* and *reasoning* might have their neural correlates. It could be suggested that this classification of mental abilities arises from the way the brain's memory systems are assumed to work.

Psychological studies, neurobiological research, and clinical findings suggest two qualitative categories of human memory. *Declarative memory* is considered the storage of verbalizable material, such as addresses, names, memories of an event, and the melody of a piece of music. This form could be congruent to Schopenhauer's term *reasoning*. On the other hand there is procedural or non-declarative memory, involving associations, skills and abilities that are not explicitly retrievable. These intuitive cognitive features, required for perception and acting, are located within the domain of *apprehension* in Schopenhauer's theory of mind.

It is also true in both paradigms that attempts to consciously reflect or communicate about the current intuitive performing can effectively inhibit its accomplishment.

Im hohen Lebensdrange, wo es schneller Entschlüsse, kecken Handelns, raschen und festen Ergreifens bedarf, ist zwar Vernunft nöthig, kann aber, wenn sie die Oberhand gewinnt und das intuitive, unmittelbare, rein verständige Ausfinden und zugleich Ergreifen des Rechten verwirrend hindert und Unentschlossenheit herbeiführt, leicht Alles verderben. (W1, §12)

However, whether Schopenhauer's strict categorization is in fact useful and correct cannot be confirmed for sure:

While it makes good sense to divide human learning and memory into categories based upon the accessibility of stored information to conscious awareness, this distinction becomes problematic when considering learning and memory processes in animals. From an evolutionary point of view, it is unlikely that declarative memory arose *de novo* in humans with the development of language. Although some researchers continue to argue for different classifications in humans and other animals, recent studies suggest that similar memory processes operate in all mammals and that these memory functions are subserved by homologous neural circuitry. (Purves et al., 2004, pg. 734)

As mentioned in the last section, the brain is not divided into a computing and storage section. *Long-term memories* are stored in the same areas that were responsible for their processing during their initial acquisition. The new knowledge seems to be used for finer and faster discrimination of the input signals or behavior generation (e.g. meanings of words in Wernicke's area, objects and faces in temporal cortex, motor tasks in premotor cortex, basal ganglia and cerebellum). (see Purves et al., 2004, pg. 733-751 and references there)

3.3 Mind and body in Schopenhauer

3.3.1 Embodiment in cognitive science

By the invention and wide-spread use of computer systems in the second half of the last century a new paradigm appeared in cognitive sciences: the *computational metaphor of the mind*. The working hypothesis was that human thinking could be reduced to information processing, internal Turing¹⁸-Machine-like¹⁹ computations or the so-called *computer functionalism*. The new research field of *artificial intelligence* (AI) was believed to solve the problems of understanding the intellect once and for all.

This paradigm proved to be unstable when confronted with the *Chinese Room Argument* by Searle (1980): Just because a system responds to a designated input with an adequate output does not imply that this system understood the input and its own doing and therefore acted in an intelligent, reasonable way. Another counter-argument was raised from the domain of computer science: The ability to play chess does not make a computer intelligent because it is essentially nothing more than rule following in an artificial environment. On the other hand, an elephant, which never meant to play chess at all, can navigate and operate within its environment in a reasonable way. Therefore it could be considered being more intelligent than the smartest AI device ever designed. (Brooks, 1991) And finally, the idea of ecological aspects in psychological modelling became popular, introducing the notion of *affordances*, the sum of all potential interactions of an agent within its environment. (Gibson, 1979)

These new insights cause a shift in perspective that thinking is deeply rooted in the bodily senso-motoric reality of the individual agent. Therefore it is not floating in an abstract space reacting to whatever input may come (which is basically what computers do), but characterized by this very dynamical interplay of brain processes, body and environment. In other words: *no mind without body*.

Biological brains are first and foremost the control systems for biological bodies. Biological bodies move and act in rich real-world surroundings. (Clark, 1998)

In the light of evolution it also makes sense to assume that the basis of all thinking is the appropriate perception, conception, and action of the individual's body and environment. For it is the key criterion for survival and successful reproduction.

¹⁸Alan Mathison Turing, 1912 - 1954, English mathematician.

¹⁹The *Turing machine* is an abstract mathematical concept that can be seen as the underlying theoretical model of modern computers.

Wilson (2002) elaborates and reflects on six key concepts and claims of embodied cognition theory:

(E1) Cognition is situated. While cognition takes place, the processing of motor and sensory data does not stop and therefore always interfere with current mental processes. Being situated means dynamically responding to changes in the environment, relevant for the task and the survival of the individual (e.g. reacting to obstacles in the path of the designated movement direction, stopping the current action to avoid predators).

(E2) Cognition is time-pressured. Further on, cognition is not only situated in locality and functionality, but also in time. Thinking usually does not occur in distinct steps of building-up a representation of the current situation and off-line processing of the acquired model afterwards, but as a dynamical process of creating efficient behavior quickly and cheaply. Sometimes – or always? – there is just not enough time and free intellectual capacity to build up a complete mental model of the situation you are in (e.g. returning a ball in tennis) (Beer, 2000)

(E3) We Off-Load Cognitive Work onto the Environment. The problem of the limited possibility (by time-pressure and cognitive limitations) to derive a full-blown concept of the epistemic reality is called representational bottleneck. One strategy to overcome this constraint is to off-load or to leave information in the environment to reduce the cognitive load by not completely encode them (e.g. calculating using pen and paper, where you are not required to memorize all needed operations and numbers at the same time – or all other forms of writing information down for later retrieval).

(E4) The Environment is Part of the Cognitive System. Cognition can only be explained when observed and modeled within its complete situated setting. That is because cognition is not always only motivated by the individual's internal motives. It is more often there to cope with specific situated interactions with body and environment. This argument suggests further studies on distributed and social cognition.

(E5) Cognition is for Action. Next, characteristics and constraints of cognition should only be considered in the light of their operative functions for the cognizer's behavior (e.g. vision for improved motor control Churchland et al. (1994), memory for perceiving and acting within environment. (Glenberg, 1997))

(E6) Off-Line Cognition is Body-Based. Finally, all different kinds of abstract cognitive activities can be traced back to senso-motoric simulations (e.g. counting can be seen as using one's fingers covertly (Wilson, 2002) and logical values as grasping an object or not).

So called *on-line cognition* is everything stated in arguments (E1) to (E5) where 'the mind can be seen as operating to serve the needs of a body interacting with a real-world situation.' (Wilson, 2002) Those aspects are indeed situated, time-pressured and the environment is highly integrated in task-oriented problem solving activities.

But Wilson also points out in her reflection on the above-mentioned claims that there is more to human cognition than what can be accessed by methods based on these assumptions.

Thinking does not always take place focused on a task happening in this very moment (see E1). Far more 'one of the hallmarks of human cognition is that it can take place decoupled from any immediate interaction with the environment.' (ibid.) If one neglects this position it surely is impossible to fit things as stimulus-independent thought (Mason et al., 2007), day dreaming, mental imagination, planning of future events completely irrelevant for the current situation, art, morality and culture into the proposed model of mind.

Those kinds of *off-line activities* usually take place when there is liberal amount of mental spare-time and the agent is not occupied with multiple demanding tasks that have to be attended instantly. Relieved from time-pressure (see E2) 'we often behave in a decidedly off-line way: stepping back, observing, assessing, planning, and only then taking action.' (ibid.)

Along the same line is Wilson's statement on the shortcomings of reducing cognition to the activity of only serving immediate action (see E5). This view would completely neglect the capabilities of all species with higher developed brain functions of finding alternative and more flexible strategies for problems by using acquired knowledge and understanding that prior, at the time of consolidation, had no obvious functional value.

A creature that encodes the world using more or less veridical mental models has an enormous advantage in problem-solving flexibility over a creature that encodes purely in terms of presently foreseeable activities. (Wilson, 2002)

Finally she draws attention to the necessary consequences for off-line thinking, when accepting the embodied cognition theory (see E6). When activated from internal motives mental imagery and the memory systems would use the same senso-motoric brain areas,

as they would use when processing external stimuli mediated by our senses. Even reasoning and problem solving make use of well-tried senso-motoric pathways to simulate spatial relations (see Wilson, 2002, for references) or to bring down abstract challenges to simpler concrete analogies. In the end, an individual also uses mental simulation to imitate and understand behavior of fellow creatures by mapping expressions isomorphically on the own body, to easier sense what it feels like. It is important to mention that these ideas are not only theoretical conclusions but also state of the art working assumptions in empirical sciences and therefore experimentally confirmed. (ibid.)

Wilson also discusses the problems of including the agent's environment (cf. E3 and E4) into the model. Since they are of no relevance for the herein argumentation they shall be excluded from this thesis. More important for the later comparison to Schopenhauer's concepts is:

1. There is a clear distinction of action-oriented on-line aspects and abstract, maybe rational, facets of cognition.
2. Off-line cognition is, although a different kind of phenomenon, rooted in our embodied way of perceiving the world.
3. Cognition serves the body in its role as an organism.

3.3.2 Embodied Cognition in Schopenhauer

Now, the claims from the last section shall be assessed in the context of Schopenhauer's theory of mind. At first glance it might look as if he has nothing to say about the role of a body in cognition. It is therefore not at all surprising that you will find statements such as the following.

Idealists, like Berkeley, Leibniz and Schopenhauer suggested that the body was just a mental representation. (Duffy et al., 2005)

While this might be true with Berkeley and Leibnitz, for Schopenhauer this statement is only partially true. He points out quite clearly that the subject understands the body in two ways: First, it is a representation derived by apprehension. Therefore it is object amongst other objects and has to submit to the a priori rules of the objective world. On the other hand, it is more than only this representation. The body is also immediately experienced as an objectivation of the Will. Any desire and act of the body is an act of Will.

In der Reflexion allein ist Wollen und Thun verschieden: in der Wirklichkeit sind sie Eins. Jeder wahre, ächte, unmittelbare Akt des Willens ist sofort und unmittelbar auch erscheinender Akt des Leibes: und diesem entsprechend ist andererseits jede Einwirkung auf den Leib sofort und unmittelbar auch Einwirkung auf den Willen: sie heißt als solche Schmerz, wenn sie dem Willen zuwider; Wohlbehagen, Wollust, wenn sie ihm gemäß ist. (W1, §18)

This dual aspect of objective representation and direct experience also guides the principle of individualization. (W1, §19)

Action-oriented on-line vs. abstract off-line cognition. The distinction between *apprehension* and *reasoning* has been already elaborated in chapter 1. It also has been mentioned that concrete representations primarily serve action, while abstract knowledge is more effective in preventing excesses and strategic planning.

Ebenso hilft es mir nicht, wenn ich den Winkel, in welchem ich das Rasiermesser anzusetzen habe, nach Graden und Minuten *in abstracto* anzugeben weiß, wenn ich ihn nicht intuitiv kenne, d.h. im Griff habe. (W1, §12)

In abstract contemplation by reasoning the human being can overlook and review life freely towards all sides, leaving the constraints of present and actuality.

Daher ist es betrachtungswert, ja wunderbar, wie der Mensch, neben seinem Leben *in concreto*, immer noch ein zweites *in abstracto* führt. Im ersten ist er allen Stürmen der Wirklichkeit und dem Einfluß der Gegenwart Preis gegeben, muss streben, leiden, sterben, wie das Thier. Sein Leben *in abstracto* aber, wie es vor seinem vernünftigen Besinnen steht, ist die stille Abspiegelung des ersten und der Welt worin er lebt, ist jener eben erwähnte verkleinerte Grundriß. Hier im Gebiet der ruhigen Überlegung erscheint ihm kalt, farblos und für den Augenblick fremd, was ihn dort ganz besitzt und heftig bewegt: hier ist er bloßer Zuschauer und Beobachter. (W1, §16)

The immediate question is now: How are online and offline aspects of cognition interwoven regarding cognitive self-control. We will revisit this topic in section 3.5.

Off-line cognition is rooted in embodied way of perception. This position is quite obvious in Schopenhauer's concept that reflections by reasoning are only based

on what is intuitively understood by apprehension. Therefore, abstract thinking does not entail some kind of genuinely new (maybe even metaphysical) knowledge but has to be situated within the domains of embodied cognition. Speaking with Schopenhauer's metaphor, the concrete representations represent the ground level of a house built by reflection. (Please refer to section 1.6, if unclear.)

Cognition is for the body. For Schopenhauer this sentence would have to be understood in this way: Cognition serves the Will which manifests itself as the body of the subject. Therewith, the goal of any form of intelligence is per se not to acquire pure knowledge but to support the Will in its willing. How we might interpret this idea will be discussed in the next section (3.4).

3.4 Naturalizing the Will

As before, we also have to face in this section the problem that one can easily produce unsound arguments when trying to discuss a metaphysical idea in terms of its scientific plausibility. In philosophy this fallacy is called *category error* and occurs whenever a concept from one paradigm is applied to another paradigm with a different scope of validity. An obvious example would be the transfer of the contingently true statement ‘This boy is said.’ to something like ‘This neuron feels sad.’, because neurons do not have any sort of feelings. However, also in the concern of the thing in itself Schopenhauer claims that his theory should not contradict empirical observations. Therefore it is possible to contrast his metaphysics with scientific theories. (WN, pg. 189)

On the one hand, the world can be separated into a domain of objective experience, which can be studied by scientific methods. In this paradigm metaphysical explanations – like causal reduction of everything happening to the act of god or explanations referring to the Will – are useless. Collision processes, for example, can be understood by physical regularities. On the other hand, there is the thing in itself, which is experienced by the individual and secluded from third person objectivation, for it cannot be known as objective, sensual representation.

Schopenhauer’s thing in itself is the Will, which can be encountered in its manifold objectivations. When aligning these objectivations within a hierarchy the human being should reside on the highest level, for its widest sphere of knowledge and ability of reflection. Within this composition it can be seen as ideal to overcome the forces of a lower objectivation. (W1, §27) All this has been stated before.

It is now attempted to reinterpret Schopenhauer’s explanations in a more modern and less figurative terminology. However, there is no intention to correct his doctrine or deny inconsistencies, but to create the possibility for adequate comparison and dialogue.

When Schopenhauer talks about an objectivation level, then it could be understood as a distinction concerning their intrinsic organization. The higher a natural system becomes in complexity, the higher its objectivation level would be.

Nowadays it is assumed that *life* should be understood as a self-regulating and self-replicating process. (Maturana and Varela, 1991, 1987, 1984) After the coming about of atoms, which formed stable inorganic molecules, organic molecules could also emerge on earth and possibly other planets. These molecules are the basic modules of any biologic organism. The ability for self-replication arose possibly first in long *ribo nuclein acid molecules (RNA)*. The very special structure of some of these RNAs enabled them to

create copies of themselves autonomously and automatically. (Agutter and Wheatley, 2007, pg. 157)

[Julius Rebek] found that when a self-replicating polymer is mixed with inefficiently replicating polymers, together with their building blocks, the best replicators quickly predominate at the expense of their competitors. This result seems obvious with hindsight; a kind of chemical Darwinism. (see Agutter and Wheatley, 2007, pg. 158 and references there)

So far, Schopenhauer's metaphorical concept that *higher objections of the Will* can prevail over lower ones is plausible. A simple organic unit is yet already able to win independence from physical incidents within its closest environment by means of self-organization, self-replication and dissociation (e.g. by a membrane). It can be absolutely irrelevant for the function of a cell, if an atom is released from its bindings e.g. by radiation, as long as its functional organization is not affected.

By further congregation of specialized cells and cell clusters the coming about of complex organisms was possible, which got a higher degree of autonomy from environmental influences. Eventually they could expand their operating range, requiring better means of knowledge development that enabled goal-directed orientation within their habitation to guarantee the survival of their structure. Analogously Schopenhauer sees the largest knowledge capacities in the highest objectifications of the Will, the human being.

It should not be advised to see humans at the peak of an evolutionary process, because there is no direction in evolution. (Wuketits, 2007, pg. 58) Evolution is not oriented towards any goal, e.g. to increase complexity or to create species with perfect knowledge. Like Schopenhauer's Will, evolution has no teleological reason. It is essentially nothing more than a principle that explains that adapted or fit organisms and species survive and bear more offsprings. Wuketits (2007, pg. 78) sees in evolution even the prevalence of dissipation over perfection when considering that only so few species have not become extinct in the course of time. Schopenhauer, too, considered all forms of life as appearances of the Will. The only thing special in humans is its peculiar development, which provide humans' distinct intellectual capacities.

Schopenhauer makes clear that physique and cognitive structures are a product of the species' or individual's life circumstances and not otherwise:

Der Stier stößt nicht weil er eben Hörner hat; sondern weil er stoßen will,
hat er Hörner. (WN, pg. 226)

in other words

So müsse auch das Gesamtwillen jedes Tieres, der Inbegriff aller seiner Bestrebungen, sein getreues Abbild haben an dem ganzen Leibe selbst, an der Beschaffenheit seines Organismus, und zwischen den Zwecken seines Willens überhaupt und den Mitteln zur Erreichung derselben, die seine Organisation ihm darbietet, müsse die allergenaueste Übereinstimmung sein. Oder kurz: der Gesamtcharakter seines Willens müsse zur Gestalt und Beschaffenheit seines Leibes in eben dem Verhältnisse stehn, wie der einzelne Willensakt zur einzelnen ihn ausführenden Leibesaktion. (ibid.)

At first glance this perspective is surprisingly coherent with modern conceptions of evolution theory. However, where these theories do not match, is in the idea of the coming about of the objectifications or species. Schopenhauer's hierarchy is a consequence of the being so of the Will as it is. Therefore also the shape of actuality is determined once and for all. In contrast, the opinion of evolution theory is to see the world as dynamical, ongoing adaptation process.

Schopenhauer knew about the first writings on evolution theory by Lamarck²⁰ and assumed therein a grave mistake, an *ingenious error*.

[...] [It is wrong to assume that the properties of a species] erst in Folge der Willensbestrebungen des Tieres, welche die Beschaffenheit seiner Lage und Umgebung hervorrief, durch seine eigenen wiederholten Anstrengungen und daraus entsprungenen Gewohnheiten, allmählig im LAUFE DER ZEIT und durch die fortgesetzte Generation ENTSTANDEN SEIEN. (WN, pg. 229)

Findings in modern biology also suggest the rejection of Lamarck's concept – however for reasons that Schopenhauer could not have known. Schopenhauer's critique affects a problem that also cannot be solved by the later published competing theory by Charles Darwin: the problem of complex structures. Schopenhauer could not comprehend how a species could possibly survive without those organs and features necessary for their ecological niche. How could they endure an adaptation process lasting several generations with a blatant deficiency or disadvantage due to the inappropriateness of their not yet developed body characteristics? (WN, pg. 230) Finally, one century later, explanations could be given for this dilemma by using insights from genetics and systemic biology.

Schopenhauer considered the biggest misconception in evolution theory's neglect to consider time as ideal and limited to the world of representations.

²⁰Jean-Baptiste Lamarck, 1744 - 1829, French naturalist.

DE LAMARCK aber konnte nimmer auf den Gedanken kommen, dass der Wille des Tiers, das Ding an sich, außer der Zeit liegen und in diesem Sinne ursprünglicher sein könne, als das Tier selbst. (WN, pg. 229)

The Will should be the foundation and is not created as a product of an intellect. Evolution theory would explain the same fact the other way around. Only those systems equipped with a Will to Life, in Schopenhauers sense, could survive and procreate offsprings.

The main distinction to Schopenhauer's world view is therefore its lack of temporal dynamics and effectively necessary pre-determination by the Will. On the other hand, evolution theory uses concepts of continuous dynamical adaptations, which do not need to be pre-determined by anything outside the world. Their necessity arises out of their very own dynamics.

Schopenhauer could now claim that any evolution theory only explains material appearances. Any statement beyond this diffident interpretation, which affects only epistemology, would be an unsound conclusion about the thing in itself, which is completely unaffected by this theory. This might be a possibility to keep up his demand to let metaphysics not conflict with scientific explanations. After all, it needs to be asked, if there are any gains by denying any metaphysical implications of evolution theory. Of course, it could guarantee that the scientific conduct cannot give any *ultimate reasons*, leaving room for philosophy, humanities, and art. However, science itself has never claimed to provide answers to questions such as the meaning of life or ethics.

3.5 The free Will and the determined will

A main topic in philosophic investigation has always been the question of free will and moral responsibility. Schopenhauer discusses this issue in his essay *Ueber die Freiheit des Willens* (*On the Freedom of the Will*), which was written after a call by the Royal Scientific Society of Denmark. Their precise question was:

Num liberum hominum arbitrium e sui ipsius conscientia demonstrari potest?

Läßt sich die Freiheit des menschlichen Willens sich aus dem Selbstbewusstsein beweisen?²¹ (FW)

Schopenhauer's reply was convincing and decorated by the royal society. It seems that in present days this writing has not lost any importance and strength of argument

3.5.1 Definitions

When discussing such a delicate issue as moral responsibility and maybe by that even implicitly the meaning of life, a clear definition of terminology is essential. It might be the case that most of the furor caused in contemporary discussion in this regard is based on wrong word usage, misconceptions and over-hasty generalizations.

The term *freedom* can be understood either *negatively*, as the absence of limitations (e.g. freedom of speech, free of charge), or *positively*. Latter notion speaks about self-determined, willed action, which is autonomous and intrinsically motivated. (Keil, 2007, pg. 1) When Schopenhauer discusses freedom in a positive sense he thinks of one of these three notions:

Physical freedom. If a person is not restricted by e.g. chains, paraplegia or any other physical constraint to perform an action, it is freely acting according to its will or nature.

Intellectual freedom. A human being can be intellectually free, when clear thinking and judgment is possible. This will not be the case under influence of physiological or mental disorders and lack of wake consciousness. It is limited in cases of substance abuse, strong affect or emotional excitement.

Moral freedom. This kind of freedom is most interesting from a philosophical point of view because it concerns those persons who are not restricted physically or

²¹Is there a way to demonstrate the freedom of the human will by means of the own self-consciousness?

intellectually to either perform an action or not. Thinking and acting is therefore only determined by motive and counter motive, which, after all, are thoughts.

The next question concerns *necessity*. It can be distinguished between *determinism* or *indeterminism* on either physical or psychological level.

According to the *Encyclopedia of Philosophy* a possible definition for *determinism* is:

DETERMINISM is the general philosophical thesis which states that for everything that ever happens there are conditions such that, given them, nothing else could happen. (Edwards, 1967, Determinism, by Richard Taylor)

On the contrary, *indeterminism* denies the idea of determinism and considers a certain degree of chance and randomness.

The notion of determinism has to be understood decoupled from the idea of *fatalism*. In determinism things happen as consequences of certain regularities (such as the natural laws) and do not need intentional a priori principles such as *fate* or *destiny* for their happening. On the other hand, fatalism could be correct, if the world was without any deterministic processes, because certain things could happen just because of fate and would not need any additional necessity from within the world.

Then, determinism does not entail *predictability*. It could be assumed that a deterministic physical system, which is completely protected from any external influence, could be predictable for any point in time, if all of its conditions (initial condition, physical laws) were known. To a certain degree this is thinkable for some theoretical systems from classical mechanics.²² But this idea completely fails when confronted with the reality of quantum phenomena and deterministic chaos. There are interpretations hypothesizing quantum phenomena as indeterministic events. Although, they might be also deterministic but unpredictable, if assuming variables hidden from observation that could make the indeterministic looking behavior deterministic again. And then, deterministic chaos is the product of deterministic processes with high sensitivity to fluctuations in its starting conditions. In this case we have behavior that looks random, but is in fact perfectly deterministic. Therefore determinism and predictability are not just freely convertible terms. (Hofer, 2008)

Schopenhauer is fully convinced by physical determinism and theoretical predictability, because he could never get in touch with those later theories that changed the classical

²²However, physical laws never directly entail determinism. Newton's *Law of Gravity* does not describe the determination of a falling object, although this sort of conclusion is often drawn. It only states that there is a regular relationship between two objects in the form of $F(r) = -G \frac{Mm}{r^2}$ (see discussion in Keil, 2007, pg. 28-32)

mechanistic worldview. As already addressed before, he commits to the common idea that ‘*everything that is, has a sufficient reason for being and being as it is, and not otherwise*’. (Hofer, 2008) He also holds the position of a psychological determinism that could be formulated as

For everything that ever happens at the level of observable human behavior, there are conditions such that, given them, nothing else could happen.
(Robinson, 1985, pg. 40)

For Schopenhauer mental processes are just as deterministic as processes of the objective world. However, he assumes that there need to be different levels of explanation for different levels of objectivation of the Will. That is why he distinguishes between three possible causes or necessities for changes:

Causes. Physical necessities by a cause within the inorganic world, in which there are direct, lineal relationships between action and consequence. e.g. The velocity of a moving billiard ball is directly related to the energy transfer from the billiard queue.

Stimulus. Processes in organic nature without direct proportions of cause and effect. e.g. A plant might have a linear growth rate related to the dosage of applied fertilizer within certain limits. If too much fertilizer is used, no anticipated effects will occur and finally it could even entail unintended consequences. Those mechanisms are also continuously experienced by humans when eating, sleeping, intellectual deliberation or when consuming stimulating or narcotic substances.

Motivation. If needs become more complicated, more manifold and are no longer attached to an immediate sensual impression it is not adequate to speak of simple stimulus responses to describe the phenomenon as such. Schopenhauer thus speaks of motives, which in humans could also be abstract and therefore product of reasoning. e.g. A person skips dinner, although hungry, procrastinates going to bed, although tired, to finish his scientific publication in time.

In the next sub-section we will discuss *moral freedom*, as mentioned above, in the light of Schopenhauer’s concepts of *motivation*.

3.5.2 Moral freedom in healthy free-range humans

Schopenhauer states that the common understanding of free will can be formulated in such a way:

‘Frei bin ich, wenn ich THUN kann, WAS ICH WILL.’ (FW)

This notion is obviously true since any self-performed action is automatically an act of will. There is no difference between *willing* and *doing*. Mental experience and action are therefore two aspects of one and the same thing. Any wish, if strong enough to win the competition of different motives is a factual act of will. Therefore one cannot stop here when asking about freedom.

‘Kannst du auch WOLLEN, was du willst?’ [und] ‘kannst du auch wollen, was du wollen willst’ (FW)

And here Schopenhauer’s discourse touches an essential problem. Is freedom of will or thought to be seen as a special irregularity from everything known, because it might feel as if occurring *without actual necessity*? This is unthinkable for him.

Bei diesem Begriff geht das deutliche Denken uns deshalb aus, weil der Satz vom Grund, in allen seinen Bedeutungen, die wesentliche Form unsers gesamten Erkenntnißvermögens ist. (FW)

Also in this regard, Schopenhauer’s arguments are dogmatic and consequences of his metaphysics. There is no prove that motives that are leading to actions come about as a necessity and can be understood in the sense of a chain of causal relationships. We would do this in ordinary language and when we rationalize our actions, but this could be the actual source of the problem. Our cognitive structures, which are adapted to find regularities in the outer world, could lead us to the wrong assumptions that they also can be found in the mental domain, the inner world. Therefore, if one denies freedom of will based on Schopenhauer’s reasons, it would be simple, consistent, plausible – but wrong. However, if it was true that self-reflexion was so prone to fallacy, it might be impossible to derive a concept of free will from there that can be rationally justified and understood. In that case, any human action could only be seen as a miracle.

3.5.3 Illusions of apparent free will

According to Schopenhauer, the individual character determines all actions, which is after all an expression of the Will. Within the objectivation of the Will, the individual, it embodies itself as something goal-oriented. It is the subjective will and is intentionally directed towards something objective. These are the needs and motives, which

cause action and are experienceable as wishes. If a decision is made the action consequently follows. It is movement of the body, which finally informs self-consciousness that the deliberation process has ended. While deciding different motives compete and the strongest will eventually become dominant. However, all these motives cannot act against the Will. No motive, no matter how strong, can therefore unfold in negligence of the individual character or history of a person.

If the character is determined, the question remains, why there is an actual experience of *agent causality* in volitional actions. Schopenhauer tries to expose this feeling of freedom as nothing more than an illusion.

Humans feel freedom only because of their hypothetical possibilities. In contrast to an animal, which is only determined by ostensive motives or stimuli, the human being has a wider spectrum of action possibilities and a higher degree of freedom. This is what Schopenhauer identified as the main reason for the false belief in the freedom of will and thought, and to act independently from any necessity.

Den Augenschein der Ursachlosigkeit, wegen Unsichtbarkeit der Ursache, haben die im Glase nach allen Richtungen umherhüpfenden, elektrisierten Korkkugeln ebenso sehr wie die Bewegungen des Menschen. (FW)

Schopenhauer compares this confusion of potential and actual possibilities with possible states of water: Of course, water can appear in different forms (liquid, solid, gas) but due to the given circumstances it can only reside in one state at a time determined by necessity.

A modern reference in this concern would be the psychologist Wegner and Wheatley (1999). He has been doing empirical studies on the phenomenon of free will experience. In several experiments he has shown how easy the feeling of free will can be mistaken. Wegner placed subjects into settings where they would experience situations of free choice but in fact were covertly manipulated in some way (e.g. by trans-cranial magnetic stimulation). It has been convincingly demonstrated that even under those tricked circumstances a person could sense their decision based on an intentional act of conscious willing. Wegner's conclusion was that the free-felt action and the accompanying thought is not causally related to each other. In fact, both are caused by unconscious motives and the thought of willingness is just a post-hoc rationalization of what is happening.

It must be noted that he could only show that *feeling free will* is not a reliable argument for freedom. However, this does not necessarily mean that the conception of free will needs to be rejected, just because there are occurrences of apparent mental causation induced by artificial designs.

Related to this, Schopenhauer further mentioned the inappropriateness of most rationalizations and problems to see the true nature of an action or its motive.

Hiezu kommt noch, daß der Mensch die Motive seines Thuns oft vor allen Anderen verbirgt, bisweilen sogar vor sich selbst, nämlich da, wo er sich scheut zu erkennen, was es ist, das ihn bewegt, Dieses oder Jenes zu thun.
(FW)

3.5.4 Character and knowledge

If a strong notion of free will was an illusion, it is necessary to discuss *who* or *what* is responsible for a decision. After all, is there a need to make any decisions? Latter is clearly approved by Schopenhauer. His conception of determinism does not deny mental deliberation. This process has to follow its necessary succession, before any act of will is performed. There are at least two reasons why taking a decision is not obsolete:

First, decisions do not just *happen*, such as stomach ache – they have to be *made*.

Wenn ich zum Beispiel in einem Restaurant sitze und mit der Speisekarte konfrontiert bin und die Bedienung mich fragt, was ich gerne hätte, dann kann ich nicht sagen: »Ich bin Determinist, ich warte einfach und schaue, was passiert.«(Searle, 2006, pg. 231)

And second, determinism cannot be used as reason for an action. Diogenes²³ tells the story of Zeno²⁴, who punished a slave for stealing:

And when he [the slave] said, ‘it was fated for me to steal,’ [Zeno] said, ‘and to be flogged.’ (in Inwood and Gerson, 1997, pg. 104)

This is why Schopenhauer suggests on the one hand abandoning the illusion of a happy-go-lucky freedom. On the other hand, one must not quit to study the very own individual character, for it is observable through its acting.

The character is unchanging and self-consciousness is a mere spectator which cannot interfere directly into the competition of motives. Therefore only within the domain of motives *improvement* and *refinement* is possible.

²³Diogenes Laërtius, probably third century A.D., Biographer of the Greek philosophers. (Not: Diogenes the Cynic)

²⁴Zeno of Citium, 334 BC - 262 BC, Greek philosopher and founder of the Stoic school.

Der Charakter ist unveränderlich, die Motive wirken mit Notwendigkeit: aber sie haben durch die ERKENNTNISS hindurchzugehen, als welche das Medium der Motive ist. Diese aber ist der mannigfaltigsten Erweiterungen, der immerwährenden Berichtigung in unzähligen Graden fähig: dahin arbeitet alle Erziehung. Die Ausbildung der Vernunft, durch Kenntnisse und Einsichten jeder Art, ist dadurch moralisch wichtig, dass sie Motiven, für welche ohne sie der Mensch verschlossen bliebe, den Zugang öffnet. So lange er diese nicht verstehen konnte, waren sie für seinen Willen nicht vorhanden. (FW)

Knowledge can finally lead to insights that might weaken the influence of prior motives. Schopenhauer explains that e.g. sins of one's youth or other mistakes can be overcome by better and more mature knowledge. All in all this will stabilize one's character.

Zu unserer Besserung bedürfen wir eines Spiegels. (P1, Aphorismen zur Lebensweisheit)

This position is neurobiologically plausible. Roth (2007) explains for example that 20 – 50% of personality are guided by the genetically determined character. The rest is regulated by prenatal and infantile emotional learning (which entails especially synaptic and neural changes inside the *limbic system*) and social development in adolescence (affecting especially the *orbito-frontal cortex*). After that, secondary traits are formed by positive experiences, which are consolidated over the years. Rational knowledge can be acquired all life long.

Rationality and reasoning cannot influence the Will itself. However, they might change motives. Schopenhauer exemplifies this by means of an individual with an egoistic character type:

Wird z.B. ein Mensch fest überredet, daß jede Wohlthat ihm im künftigen Leben hundertfach vergolten wird; so gilt und wirkt eine solche Überzeugung ganz und gar wie ein sicherer Wechsel auf sehr lange Sicht, und er kann aus Egoismus geben, wie er, bei anderer Einsicht, aus Egoismus nehmen würde. Geändert hat er sich nicht: *velle non discitur*. (W1, §55)

The egoist stays an egoist – however his actions are no longer primarily egoistic, because he is expecting reciprocity.²⁵ Here it is seen that the intellect serves the Will and is subordinated to him. This means it does not change the goal of an individual (e.g. May

²⁵If this eventually bases on the belief in a supernatural re-compensation, he will not be disappointed for all his life, as long as he does not fall from believing so.

I be happy.) but the way he or she is attempting to reach it (e.g. Wealth does not make me happy when its coming about has been unjust. That is why I am going to modify the way I make my money to salve my conscience.)

For instance, the realization that current circumstances are not propitious to the fulfillment of his interests might induce the agent to postpone, or perhaps even renounce, it. Reginster (2008)

3.5.5 Discussion

In this final sub- some consequences of Schopenhauer's concept of freedom shall be discussed.

First Schopenhauer's idea of *universal determinism* is quite unlikely in the light of modern understanding. He believed in the idea that future is already determined once and for all, which of course supported his theory to unmask free will as an illusion. Nowadays it is more plausible to assume that thoughts, will and actions are maybe determined (by character and environment) but definitely not predictable because of their dynamics. However, it might be valid to describe and model them in terms of probabilities because of certain regularities. For example: If it is raining outside, there is a high chance a person will want to take her umbrella before leaving the house. But this is not a determination in a stochastic sense, because there is a probability $p \neq 0$ you decided otherwise. Indeterminism might occur in spontaneous activity of neurons, although their effects are limited because of error-correction mechanisms of the nervous and mental systems.²⁶ Other cases could be new situations where no opinion or motive was available and the subject would just do anything randomly. This is maybe best understood in the dynamics of neural coalition activity.

Besides that, is Schopenhauer's notion of willfulness worth to have? Of course, it is quite obvious that any fatalist and incompatibilistic determinist can easily submit to this theory. But also for people that need the feeling of freedom for being comfortable with their lives²⁷ some aspects might be interesting to consider.

Schopenhauer makes clear that nobody can want something he or she does not want. This is quite obviously seen in everyday experience. If one wants to achieve something

²⁶However, a random activation of sympathetic nervous system would increase heart-rate. If then circumstances are unusual or a little bit uncomfortable, one might interpret this as a sign of fear. This can cause high levels of stress and maybe even worse consequences, which were actually completely unnecessary.

²⁷Grün (2008) distinguishes between *freedom enthusiasts* and *naturalists*, who can live without a concept of free will. This is of course highly disputable, for there are well-enough naturalists who assume some form of freedom (e.g. Libet, Searle).

that requires high amount of self-discipline, it can be experienced that different motives with different degree of reasonability are competing for dominance. Knowledge of the functioning of one's mind or character and the right strategy can then be a key criterion to reach the anticipated higher goal instead of following some other drives, which are maybe considered minor. That means one cannot directly rationally influence what is wanted, but one can influence the motives by learning and training.

Let us turn back to the above-mentioned example of a radical egoist. He will most likely not change his strategy, if he stays successful with it. However this could change, if any form of self reflexion, experience, insight or teaching is powerful enough to convince him that it might be morally wrong to use and abuse other beings. But even if this sort of acceptance might happen, it is possibly not sufficient to actually change his way. He could go on as before and might only feel some sort of guilt about it. Even if this guilt becomes so strong that it is heavily influencing the quality of his life, he might not be able to change the way he *is* and feels terribly miserable. However, by adequate cognitive strategies he could learn to elaborate on abstract motives that prevent him from doing exactly what he is considering as wrong. Of course, he cannot be forced extrinsically and cannot force himself intrinsically to learn those strategies or do self reflexion. Some people also seem to prefer feeling miserable over changing something. On the other hand there are people who are trying to change their behavior but do not know how and get frustrated because they cannot change their *will* or what they want.

Schopenhauer sees the human being equipped with the ability to submit its actions to abstract motives. This gives him some degree of independence of the current situation and circumstances. One can therefore aim to achieve something morally *good*, for example *compassion* according to Schopenhauer's ethics. If actually wanted, those ethical motives can be learnt to be causally efficient and can change the way the character unfolds itself.

In this context it might be pragmatically valid to say:

Wenn wir durch Ethik das Verhalten des Menschen verändern wollen, dann nützt es wenig – und dies hat Schopenhauers Ethik ebenso wie die Erfahrung gezeigt –, dass wir ihm beständig die vermeintliche Unwiderlegbarkeit unverständlich formulierter rationaler Gründe für sein Handeln demonstrieren. Sinnvoller scheint es, auf die Ausbildung und Erziehung, auch die Charakterbildung des Menschen größeren Wert legen. Erst wenn die Menschen anders sind, werden sie auch anders handeln. (Grün, 2008)

Maybe this is a form of freedom worth having. Freedom would be the ability to learn and develop. There are of course some constraints due to physiology (obviously it might be

hard for a for a deaf person to become a conductor at the Vienna Symphonic Orchestra) and character, but still many things could be possible if finding the right strategy. If assuming the position that the inner will itself cannot be changed, it might release some pressure and could help to focus attention on concrete acting. This could help avoiding frustration and learned helplessness when attempting to change the way a person is.

However, this should not seduce someone to claim the position that the brain or a certain brain area or function is deciding and not the individual. This has become shockingly dominant especially in popular scientific publications and is definitely not the right way to address this topic. Decisions and willing are properties of an individual and because of the complexity of all factors involved in their coming about, they are only understandable in a holistic way:

Free will is the attribute of a person such that every action he or she does is a function of the interaction between the event environment and the sum total of his or her mental dispositions at the moment of that action. (Levy, 2003)

Finally, as mentioned above, even determinism does not save us from responsibility and decision. Therefore we are *sentenced to freedom*, as Sartre²⁸ said. Maybe this is what some people might disapprove and therefore prefer taking a non-libertaristic position. Perhaps it might be reasonable to adopt Grün's statement (see footnotes) and change it into a distinction between those people who are comfortable with responsibility for their actions and those who would rather dismiss it.

Maybe my interpretation of Schopenhauer's publication on the freedom of the will could be summed-up to the line: Perhaps we cannot change *who* we are, but we can learn to change *how* we are.

²⁸Jean-Paul Sartre, 1905 - 1980, French philosopher and writer.

Concluding Remarks

As pointed out in my introduction, this thesis covers a wide array of different questions. Some of them could be precisely answered, some prior ideas could be revised, but most of them are still open for discussion on a more distinct level.

In the first section of my discussion I have investigated some problematic aspects of Schopenhauer's version of transcendental idealism and his obvious lack of sufficient argumentation. It has been shown that we need further proof to accept his idea of reducing the objective world on to the subjective world (*The world is my representation.*). It is also not clear whether justified skepticism about what is perceived suffices to assume a thing in itself, which is beyond our knowledge. Then, there is Schopenhauer's claim that space, time and causality are nothing more than principles of our mind and that they cannot be applied to whatever resides in the mind-independent world. In this concern I explained that scientific findings would not help to solve this problem. If Schopenhauer was right, all scientific statements would be dependent on the a priori conception of space, time and causality. However, what is very charming (almost in a romantic way) about his worldview is the transcendental foundation of an ontological monism and epistemic pluralism. His layout consists of an objective domain (*World as Representation*), which is subject to empirical observations, natural sciences and rational reflexion, and a realm of non-objective things that can only be experienced, but not *known about* (*World as Will*). For latter only musical, artistic or poetic forms of expression and first-person-experience are suitable.

After that, I introduced Schopenhauer's theories about the mind and the brain and demonstrated that it can be seen as an early version of contemporary paradigms. It still remains *mysterious* how the mind can emerge as a consequence of neural processes, but his intuition was maybe right that it has something to do with the specific arrangement and architecture of the nervous system and the brain in particular. Next, according to our modern understanding, he was right that sensory organs alone are not sufficient for creating mental objects. Perception cannot happen without all those necessary sensory

integration processes within the brain. His distinction between the faculty of apprehension (responsible for perception and action) and the faculty of reasoning (capable of verbalization, reflexion, and abstract thought) might be psychologically plausible (see Sloman, 1996). However, they could be hard to pinpoint by neuroscientific classifications (in this regard I suggested implicit and explicit memory systems as possible candidates). The problem could be that they are even inconsistent with findings from biological research on animal behavior and cognition.

The theory that cognition should be understood in an embodied way, can be clearly found in Schopenhauer's doctrine. The Will manifests itself as the body and the intellect exists to support the body to fulfill its needs and desires. However, embodiment strongly criticizes all representational theories for their incredibly high demand in computational power. Is our brain really capable of constructing such a high-detailed world – even under time-pressure? Schopenhauer did not address or foresee this problem. This computational bottleneck might be a real threat to his conception of mental objects.

Then, I discussed the role of Will in nature. Schopenhauer designed an elaborated metaphysical framework to explain the variety of creatures and why distinct parts and properties of the world fit together. However, evolution theory – its first version by Lamarck was rejected by Schopenhauer – managed to solve this mystery by explanations from within the world, instead of using metaphysical assumptions that are necessary for Schopenhauer's conception of transcendental Will. Nevertheless, it is not answered why evolutionary process happen the way they do. The statement of the *anthropic principle* seems to be the only thing we have, because there is no definite cause for the world to be this way. But same applies to Schopenhauer's Will, which is also not subject to necessity.

Finally, I presented Schopenhauer's thoughts on the freedom of the will. While the Will is absolutely free, the individual's will is not and is only a consequence of the transcendental Will. It can be said that his contributions to the free will debate match with popular contemporary positions that are especially enforced by empirical scientists. In this concern I mentioned that in the polemic discussions it is often overseen that any form of determinism does not impair moral responsibility and the necessity of deliberation. I therefore elaborated the position that even if psychological determinism was true, we are still capable of learning, self-reflexion, education, and to submit to rational and ethical motives. This might actually be the kind of freedom we implicitly assume and would like to have. But when it comes down to it, the question of free will is far from being solved. Especially all new neurobiological results need careful hermeneutic interpretation, before jumping to conclusions about human freedom that usually entail a wide spectrum of consequences.

In the end it has to be stated that large portions of Schopenhauer's ideas were not considered in this work. I tried to detangle his theory of mind and ontology from the inherent pessimism and melancholy found in his texts. I cannot share his view of life as a constant oscillation between suffering and boredom, nor the conclusions he draws from there. Then, I also do not support his harsh position towards women, and I condemn his keen and polemic style when addressing persons with different opinions. Unfortunately, nowadays Schopenhauer is most famous only for those infamous aspects of his writings. In my thesis, however, I preferred to take a rather different focus and approach to his fascinating considerations and well-structured thought models.

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Curriculum Vitae

Ronald Sladky (*06. 07. 1983 in Steyr, Österreich - Eltern: Ernst und Marianne Sladky) ist Student des interdisziplinären Master-Programms Cognitive Science am Institut für Philosophie der Universität Wien. Als Nebenstudium betreibt er die Masterstudien Medizinische Informatik und Informatikmanagement. Sein Bakkalaureat-Studium Medieninformatik absolvierte er an der Technischen Universität Wien.

1993 - 2001 Bundesrealgymnasium Michaelerplatz, Steyr.

Schwerpunkte: Biologie, Physik, Chemie, Informatik, Geschichte und Latein.
Abschluss: Matura mit Auszeichnung.

2002 - 2006 **Bakkalaureatsstudium Medieninformatik.**
Technische Universität Wien

Schwerpunkte: User Interface Design, Human-Computer-Interaction, Computergrafik, Web Entwicklung, Medizinische Informatik, Informationsvisualisierung.
Abschluss: Bakkalaureus der technischen Wissenschaften.

2006 - **Masterstudium Medizinische Informatik.**
Technische und Medizinische Universität, Wien

Schwerpunkte: Klinische Informatik, Bildgebung.

2006 - 2009 **MEi master programme in Cognitive Science.**
Universität und Medizinische Universität, Wien

Schwerpunkte: Verhaltensbiologie, Philosophie und Neuroscience.
Forschungsgebiete: Theory of Mind, Bewusstsein, Freier Wille, gesellschaftliche Implikationen der Kognitionswissenschaften, Modellierung.

Auslandssemester in Ljubljana (Slowenien) an der philosophischen und der medizinischen Fakultät im Wintersemester 2007.

Ronald Sladky (born 06.07.1983 in Steyr, Austria - parents: Ernst and Marianne Sladky) is a student of the middle European interdisciplinary master programme in cognitive science at the University of Vienna (Department of Philosophy). In accordance with this curriculum he joined projects and courses at the University of Ljubljana (Department of Philosophy and at the Medical Faculty). He achieved a Bachelor of Science in Computer Science (Bakk. techn.) at the Technical University of Vienna.

Zusammenfassung

Nach Ansicht des deutschen Philosophen *Arthur Schopenhauer* (1788-1866) ist die Welt, die wir sehen und kennen, nicht Deckungsgleich mit der Wirklichkeit. Er nennt dieses gedankliche Bild die *Welt der Vorstellungen*, die durch das Wirken unseres Intellekts entsteht. Diese Vorstellungen sind das subjektive und persönliche Korrelat der Wirklichkeit und abhängig von unserer Wahrnehmung und den internen Wirkungsweisen unseres Intellekts. Da Schopenhauer einen rein *subjektiven Idealismus* verwirft, glaubt er an die ontologische Existenz eines beobachter-unabhängigen Seienden, das er in der Tradition Kants das *Ding an sich* nennt. Dieses Ding an sich erkennt er im *Willen*, eine transzendente, ungerichtete und außerpersönliche Kraft, die kein intentionales Ziel verfolgt, außer fortwährend zu wollen und zu streben. Für uns Menschen liegt der Wille außerhalb der objektiven Wissbarkeit, wenngleich wir sein Wirken ständig als Wünsche, Triebe, Neigungen und den Willen zum Leben erfahren.

Der Schwerpunkt dieser Arbeit liegt auf ausgewählten Standpunkten von Schopenhauers Philosophie, die mit Hilfe moderner Fragestellungen und Ansätzen der interdisziplinären Kognitionswissenschaften analysiert werden sollen. In 3.1 wird Schopenhauers Version des transzendentalen Idealismus mit logischen und naturwissenschaftlichen Mitteln hinterfragt. Es konnte gezeigt werden, dass Schopenhauers Argumente nur höchst unzureichend sind und sogar logische Fehler enthalten. Dennoch wurden in der Folge jene Hauptannahmen ausgearbeitet und diskutiert, welche nach meiner Überzeugung die Grundpfeiler von Schopenhauers Erkenntnistheorie sind. Danach werden Schopenhauers Theorien zu Gehirn und Geist auf ihre neurobiologische Plausibilität geprüft (3.2). Ein aktuelles Paradigma der Cognitive Science ist die Theorie der verkörperten Kognition (*embodied cognition*). Im Zuge dieser Arbeit wurde erläutert, dass ähnliche Ansätze bereits in Schopenhauers Philosophie anzutreffen sind (3.3). Da einige Charakteristika von Schopenhauers Wille-Konzept stark an Aussagen der Evolutionstheorie erinnern, sollte in 3.4 die Frage gestellt werden, ob der Idee eines transzendentalen Willens auch metaphorisch verstanden werden könnte und ob eine Naturalisierung möglich ist. Der letzte Abschnitt behandelt das Thema Willensfreiheit und inwiefern Schopenhauer einen Beitrag zur gegenwärtigen Diskussion leistet (3.5).